P. 2

22102356384

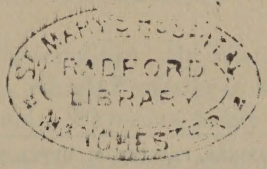
BOUND BY
W. H. Woods & Co

THE

DUBLIN JOURNAL

OF

MEDICAL SCIENCE.



VOL. LXXIII.

JANUARY TO JUNE, 1882.

DUBLIN:
FANNIN AND COMPANY, GRAFTON-STREET.
LONDON: LONGMANS & CO.; SIMPKIN, MARSHALL & CO.
EDINBURGH: MACLACHLAN AND STEWART.
PARIS: HACHETTE & CO.

1882.

DUBLIN: JOHN FALCONER, PRINTER, 53, UPPER SACKVILLE-STREET.

WELLCOME HISTORICAL MEDICAL LIBRARY

WELLCOME INSTITUTE LIBRARY
Coll. wellMOmec
Call No. Ser W1 1012I

300 4 n Jratt St Mary

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

ST MARY'S HOSPITAL RADFORD LIBRARY MANCHESTER

JANUARY 2, 1882.

PART I.

ORIGINAL COMMUNICATIONS.

ART. I.—*Idiopathic Pericarditis.*[a] By WALTER G. SMITH, M.D., Dubl.; F.K.Q.C.P.; King's Professor of Materia Medica, School of Physic, Univ. Dubl.; Physician to Sir P. Dun's Hospital.

IF we compare the three great serous membranes we find a marked difference in their respective tendency to primary inflammation of their tissue. Thus idiopathic inflammation of the pleura, acute or chronic, is one of the commonest diseases we have to treat; primary peritonitis, at least of the chronic form, or in a limited degree, is not so very infrequent,[b] while the existence of diffuse acute primary pericarditis is scarcely admitted by some authorities, or, if allowed, its occurrence is passed over as one of such exceptional rarity that its diagnosis possesses little interest in relation to daily practice.

In the present paper I propose to relate three cases of acute idiopathic pericarditis which came under my notice within the past three years in the Adelaide Hospital, two of them in the course of last spring.

By idiopathic pericarditis I mean inflammation of the pericardium occurring independently of injury or other local cause, or of extension from the neighbouring parts, and exhibiting no

[a] Read before the Medical Society of the King and Queen's College of Physicians, Wednesday, December 7, 1881. [For the discussion on this paper see page 55.]

[b] Dr. Hilton Fagge, from his experience at Guy's Hospital, computes that simple chronic peritonitis accounts for one case of ascites to every two cases from cirrhosis of the liver.

demonstrable relationship to rheumatic fever, chorea, the exanthemata (*e.g.*, scarlatina), renal disease, pyæmia, tuberculosis, or the puerperal state. I do not at present take into account cases of isolated partial pericarditis, attended with trivial or no symptoms.

In the first case the diagnosis was justified by an autopsy; in the second it was confirmed by such a careful observer as the late Dr. Hayden; and in the third the symptoms and other evidence are, I submit, sufficient to warrant the diagnosis that was made.

In none of the cases could a definite cause be assigned, neither were alcoholic influences at work, upon the causal potency of which von Dusch and Bauer agree in laying stress.

Case I.—Jane M'W., aged twenty-two years, was admitted under my care into the Adelaide Hospital on July 1st, 1878. I will relate her case in abstract from the detailed notes of Dr. Wallace Beatty, who assiduously watched the patient. The girl gave no history of constitutional delicacy beyond the facts that two years previously the catamenia had become irregular, and had ceased for the last six months without apparent cause, and that during the past year she had trouble in retaining her urine for any length of time. She was, however, in the enjoyment of fair health up to the last week of June, 1878, when she began to feel weak and tired. On the 27th June she had headache, and next day was obliged to take to bed. On Saturday, June 29th, she was attacked with sickness, vomiting, diarrhœa, and slight epistaxis. She ventured out on July 1st, and one of my colleagues sent her to my house with a request for admission to hospital as a probable case of fever, and the general symptoms seemingly warranted such a suspicion. Her temperature was 102·3°, but I observed that while the heart-sounds were *regular* the radial pulse was *very irregular*. She had a short, dry cough, and complained of pain in the mid-sternal region. Respiration 36. Next day her condition was as follows:—She had had a bad night, and looked very ill and distressed. Pulse 112, irregular as before. There was epigastric tenderness; the apex beat of the heart was not visible, first sound very feeble, and second sound reduplicated; the area of cardiac dulness was enlarged, and a short, rough sound was heard over the base of the heart; respiratory sounds normal; small white patches on the tonsils; there was soreness along the urethra, and she could scarcely pass urine. During the next two days she was very restless, and had frequent vomiting of green fluid.

The temperature and pulse remained high, and the remarkable discrepancy between pulse and heart-beat continued. It was further noticed that the cervical vessels pulsated strongly, especially on the right side. On July 5th the cardiac sounds could be distinctly heard

over the base, but were almost inaudible at the apex, and were *unattended with murmur*. The pulse became so feeble as to be counted with difficulty, the heart-sounds were now *irregular*, and the breathing very laboured at times. On July 7th dulness at the base of the right lung was detected, with crepitus, and for this she was leeched and poulticed. Severe paroxysms of dyspnœa attacked her, chiefly at night, and on July 9th she was ordered, at Dr. Little's suggestion, small doses of calomel frequently repeated. From the first she was allowed wine, and required sedative draughts at night. Upon the 10th July the pulse became *regular*, and remained so till the end. On the 15th—*i.e.*, *a fortnight after admission*—a very rough systolic friction sound was audible over the base of the heart, and on the 20th pleuritic friction sounds were heard on the left side. For several days previously she was much distressed by sharp stabbing pains in both sides, which were usually relieved by poulticing. The respirations varied from 40–60 per minute. On July 23rd a double sawing murmur was detected at the base of the heart, yet for some days at this period she looked and felt better, and hopes were entertained of her recovery, especially as she bore up cheerfully and made a brave fight for life. Præcordial fremitus was perceived on the 25th, and the double sawing murmur persisted. Soreness of the throat, causing dysphagia, annoyed her for several days. In the afternoon of July 30th she was suddenly seized with rigors, her fingers turned blue, her face livid, and the pulse was extremely weak and rapid. She rallied from this state of collapse under the use of stimulants, but the pulse never fell below 140, and she sweated freely. Next night she was slightly delirious.

The notes made of the cardiac signs on August 7th show that the basal friction murmur had disappeared, præcordial thrill was doubtful, and the area of dulness was notably lessened. She passed rather a restless night, and next morning at 9 o'clock was again seized with rigor, acute pain in the head, and she became collapsed, the pulse rising to 176. Another rigor succeeded at 12 o'clock; she was unable to speak or swallow; clonic spasms set in, with stiffness of the arms; the eyes opened widely and the pupils dilated. At this juncture her aspect was peculiarly wild and distressing to witness; she soon became greatly agitated, throwing her arms about, woke up after a short sleep, and with a few interrupted gasps passed away.

Permission having been obtained for a limited *post mortem* examination, the thorax and abdomen were opened twenty-five hours after death. The right pleura contained two or three ounces of dark serous fluid, and a few fleecy adhesions existed between its layers. There were no adhesions on the left side. Upon the pulmonary pleura, especially on the phrenic surface of right lung, were a few flakes of recent lymph. The right lung was adherent to the pericardium over a very vascular surface,

and in the apex of that lung there was a yellow caseous nodule, about the size of a hazel-nut, softening in its centre. Except in this one spot the lungs were universally crepitant, although congested, and they presented no evidences of pneumonia. The pericardial sac was not distended; its outer layer was yellowish, as tough as cartilage, and about one line in thickness. The epicardial layer resembled the outer layer in appearance, and between these two laminæ were two soft, red, velvety layers, adherent to each other, yet readily torn apart, the separated surfaces being rugose, highly vascular, and spotted with white patches. There was not the slightest trace of endocarditis or of valvular mischief. The right ovary was puckered and opaque on the surface; the left ovary was enlarged, and upon section presented a dense fibroid structure, with a yellow cortex a line thick. The other abdominal organs were healthy.

Summary of the Case.—Insidious commencement. Early symptoms like those of enteric fever. No history of antecedent or concomitant rheumatism or other disease. Indistinct signs of cardiac mischief the day after admission. Remarkable discrepancy between pulse and heart before any murmur was heard. Double friction sound not developed until a fortnight after admission—then audible for a considerable time. Repeated attacks of sickness of stomach. Early and marked visible arterial throbbing. Prolonged orthopnœa, and several attacks of collapse. Dry pleurisy developed on each side. Sore throat came on late in the case. No endocarditis. *Temperature.*—From July 1st to July 13th the temperature fell below 101·4°, rising on three occasions to 103·8°. After that date the temperature oscillated very irregularly, not rising above 103°, and on two occasions sinking to 98·2°.

Case II.—(Clinical notes by Dr. E. Gordon Hull.)—James H., a boy aged eighteen years, was admitted into the Adelaide Hospital, January 29th, 1881, with a vague history of having been ill for five weeks without apparent cause, and not making any definite local complaint. He looked very ill; his countenance was pale and anxious;[a] he lay on his back or on his right side, and he was sweating. There was no arthritis. The tongue was red and slightly furred. Crepitus heard over the right lung, with stuffy respiration at its base.

Upon examination of the heart it was found that the cardiac dulness was increased, chiefly in an upward direction. Impulse diffused, and apex beat higher than usual. Over the left apex the heart-sounds were triple (tĕr-lál-lă); first sound badly marked, and occasionally a tumbling sensation was conveyed to the ear. Over the sternum the sounds were

[a] Dr. Sibson remarks that a marked change in the appearance of the patient occurs in a large majority of cases of rheumatic pericarditis, and that, in fact, the attention is at once drawn to the heart by the altered countenance. (Reynolds' System of Medicine. Vol. IV.)

more distinct, and over the second right costal cartilage they were double and assumed a cantering character.

The pulse was 140, excessively weak, hyperdicrotous, but regular, and the carotids visibly pulsated. Temperature 100°; respiration 48.

Next day the præcordial dulness measured 3½ by 3 inches, extending from left sternal border to left of nipple, and from third rib above to sixth rib below. Instead of a distinct impulse a diffused vague undulation was felt, and the pulse could scarcely be reckoned. The sounds of the heart had a galloping character. The urine was free from albumen. That night the patient was slightly delirious.

Feb. 1st.—Diarrhœa and abdominal tympany. There was a troublesome, short, harsh cough. The præcordial region was tender to the touch. Pulse thready, extremely dicrotous. No evidence of endocarditis.

I should here mention that knowing the interest he took in diseases of the heart, and moreover wishful of his opinion, I asked the late Dr. Hayden to see the patient with me. He did so on this day, confirmed the diagnosis of myo-pericarditis, and candidly admitted that this case convinced him as to the occurrence of acute pericarditis as a substantive idiopathic affection.

4th.—The triple sounds were audible over a large area. Pulse 130, stronger; sweating freely; perspiration highly acid.

5th.—Pulse 108, regular; heart-sounds still triple (tup-ti-ty). Moist crepitus and rhonchus over upper part of each lung.

8th.—Sweating freely. The tripling of the cardiac sounds has disappeared, and the second sound is prolonged and murmur-like over second right costal cartilage.

A week later a limited systolic basic murmur was heard at the junction of the second and third cartilages on the right side, but this gradually faded, although even when convalescent it could be elicited by exercise. The boy was soon able to get up every day, and the heart-sounds became normal.

March 3rd.—It was noted that the point of impulse varied considerably with the position of the patient, moving 1½ inch inwards when changed from the recumbent to the sitting posture. A second focus of impulse was plainly visible in the second left interspace. The præcordial dulness was less, but retained the character of being wider below than above.

He soon left hospital quite convalescent, and I did not see him again until July 25th, when he reported himself as feeling quite well and suffering no inconvenience whatever from his heart. The point of impulse did not materially alter whether he leaned forward or to the right or left side.

He again presented himself for examination on Nov. 9th, and nothing abnormal was detected about the heart.

Case III.—(Clinical notes by Mr. H. T. Bewley).—James W., aged fourteen years, admitted March 23rd, 1881. Two years previously the boy had typhus fever, but since that time he enjoyed good health, with the exception of occasional headaches, until about a fortnight ago, when he felt one evening a sharp pain or stitch over the heart, and towards the axilla. For this linseed poultices were applied, and next morning the pain was gone. On March 17th he began to suffer from severe fits of coughing, the paroxysms sometimes being followed by vomiting. About the same time he experienced a pain all over the left shoulder, which prevented him raising his arm, and on the evening of the 21st he had rigors, and felt a dull pain over and below the heart, intensified by inspiration. Still he was able to go about until the evening of the next day. The boy exhibited no arthritic symptoms. He stated that his father suffered from rheumatism and heart disease.

When admitted to hospital, he was so weak as to be scarcely able to sit up in bed for examination. The expression of his face was anxious and distressed, and there was an eruption of herpes at the left corner of the lower lip. Temperature, 104°; pulse, 130.

Heart.—Epigastric pulsation and slight apical thrill. First sound seems to run into the second, but no distinct murmur could be detected. A well-defined area of præcordial dulness extended laterally from mid-sternum a little to left of nipple line. Carotid pulsation was strongly marked, and the lobule of the ear was agitated by the throbbing. Leeches were put over the heart.

Lungs.—Snoring rhonchus over upper left lobe. Sputum viscid, clear, and partly muco-purulent. Respirations, 30–38 per minute.

Urine free from albumen.

For two days after admission the evening temperature remained high—viz., 103° and 102·6°, and the pulse varied from 108 to 126. The day after his admission, when the pulse reckoned 110, the heart-beats were 135 in the minute. On the fifth day of his stay in hospital there was a rapid fall in pulse and temperature.

March 26th.—Cardiac impulse extremely feeble, except when patient sits up and leans towards left side. First sound very weak. No fremitus can be felt.

27th.—Area of cardiac dulness the same as before. Rhythm and rate of the heart-sounds normal.

28th.—Soft systolic bellows murmur at apex of heart. Cardiac dulness somewhat increased. Patient looks better, and is not much troubled with cough.

29th.—First sound has a loud booming character, but no positive murmur is audible; second sound reduplicated.

30th.—Præcordial dulness diminished, and faint apical thrill.

Next day the patient was allowed up, and the day following was able

to leave hospital. Throughout this case, although repeated examinations were made, nothing of the nature of a pericardial friction sound could be made out, but for several days the quality of the cardiac sounds varied remarkably from day to day.

On the 10th of October the boy reported himself in good health, except that he suffers from some dyspnœa upon exertion, and feels a pain over the lower part of the heart. No murmur of any kind could be detected, nor any evidence of enlargement of the heart.

While all will readily grant that primary pericarditis is of comparatively exceptional occurrence, it must, I think, be admitted that its rarity is apt to be over-estimated, and that we cannot fully endorse the statement of Dr. Sibson that "inflammation of the surface of the heart and the lining of the pericardial sac occurs so very rarely by itself . . . . that we cannot practically regard it as a distinct disease."[a]

Dr. Walshe's testimony is, "I have never seen idiopathic pericarditis as a solitary disease;" and Niemeyer states that "it is extraordinarily rare for this malady to attack previously healthy persons as an independent isolated disease." Other authors of repute (Latham, Flint, &c.) could be quoted to the same effect. Several authors who assert that pericarditis may arise from exposure to cold, independently of rheumatism, do not appear to base this statement upon facts observed by themselves. Thus Dr. Hayden, in his "Treatise on Diseases of the Heart," in enumerating the conditions under which pericarditis is met (p. 333), puts a (?) as to the occurrence of simple idiopathic pericarditis, although on a previous page "exposure of the body, whilst heated, to the influence of cold," is adduced as one of the causes of acute pericarditis.

Bauer, following Bamberger, remarks that previously healthy individuals but rarely suffer from primary pericarditis, and among these few cases are perhaps many which pass for idiopathic pericarditis, because the fundamental affection escapes observation.

To give numerical data, Duchek observed 1 case of primary pericarditis among 89 cases of inflammation of the pericardium, and of 63 cases collected by Bamberger, 5 were idiopathic, and 1 of these was caused by a wound.[b]

[a] Reynolds' System of Medicine. Vol. IV., p. 186. Curiously enough, Dr. Sibson, further on in his lengthy and elaborate article, refers to three cases of idiopathic pericarditis, unassociated with any other definite affection.

[b] Ziemssen. Handbuch der Spec. Pathol. u. Ther. Band VI. 2te Aufl., p. 634.

I am disposed to think that these oft-quoted statistics, which are not very recent (*e.g.*, they are cited by Friedreich, 1867), understate the case, and that if physicians were to search their clinical records, evidence would be forthcoming of the correctness of this supposition. In this opinion I am supported by Dr. Bäumler.[a] In an interesting communication by Dr. W. H. Day, in *The Lancet*, July 16, 1881, he reports a case of acute idiopathic pericarditis in a boy, aged eleven. The friction sound was not heard until the eighth day after the commencement of the symptoms. The child made a good recovery. He also refers to another case of acute pericarditis which he observed in a lad, sixteen years of age, who, whilst driving in the cold air, was suddenly seized with severe pain in the cardiac region, followed in two days by the usual physical signs of pericarditis. The patient had been in good health previously, and there was no history of rheumatism or any other disease. Recovery was complete in this case also.

Now, if primary pericarditis be not so uncommon as has been generally supposed, it is of practical moment that we should recognise this fact. The strange thing indeed is this, that it should be so seldom met with in a severe form. Such recognition will tend to keep observers more on the alert to detect a formidable disease which often commences so insidiously,[b] and it emphasises the necessity for accurate examination of the heart, repeated at short intervals, in all cases of acute febrile disturbance.

ART. II.—*On the Re-establishment of a divided Salivary Duct.* By W. THORNLEY STOKER, M.D.; Fellow, Member of Council, and Professor of Anatomy, Royal College of Surgeons in Ireland; Surgeon to the Richmond Surgical Hospital, and to Swift's Hospital for Lunatics.

THE existence of salivary fistulæ is so untoward a circumstance, so inconvenient and disfiguring, that any contribution to its surgical literature will be of interest to those who may have to deal with such cases. With the view of benefiting others by my experience I wish to place on record two instances of division of

[a] Trans. Clin. Soc. Vol. V., p. 10. One of Dr. Bäumler's cases is especially interesting, inasmuch as he was himself the subject of the observation.

[b] Cases of this kind not infrequently occur in children, and their complaints being rather indefinite, the disease may be entirely overlooked. Bäumler, *loc. cit.*

Stenson's duct which have lately occurred in my practice, and which will, I believe, prove instructive :—

Case I.—Is that of a clerk named O. O'M., aged fifty-four, who was admitted into the Richmond Hospital on August 13th, 1881. He suffered from an epithelioma, circular in shape, as large as a crown piece, projecting above the skin, and situated in front of the left ear. It was placed over the parotid gland and the region in front of it where Stenson's duct runs forward to enter the mouth. Although it was superficial, I believed that the duct could scarcely escape injury in an operation for its extirpation, but there was no choice in the matter, and I removed it on August 19th. Two vertical curved incisions were made so as to enclose an ellipse of tissue, the extent of skin removed being very considerable, as the doubtful condition of the parts bordering on the disease rendered their removal imperative. The epithelioma and the surface of the parotid gland, to which it was loosely attached, were then dissected off, and the most troublesome hæmorrhage which I ever saw coming from so comparatively superficial a wound, was checked by the application of numerous catgut ligatures.

I made no attempt to perform any plastic operation for the repair of the large surface exposed, nor did I even attempt to draw the edges together, as I have often seen such efforts when made in cases of cancer of the face cause so much irritation of the very vascular tissues of that region that an aggravated return of the disease has resulted, and I am of opinion that it is usually most advisable to leave the process of repair, as far as possible, to nature. No attempt to preserve antiseptic conditions was made, as the proximal portion of Stenson's duct had been removed with the disease, and the consequent escape of saliva would make such precautions useless. The wound was dressed with lint and carbolic oil, which was renewed daily until he left hospital on September 20th.

During the time he remained in hospital a profuse flow of saliva from the wound took place, and necessitated a large pad of absorptive cotton being worn below the jaw, and changed as frequently as it became saturated. At the time of his discharge the wound on the cheek had contracted to about the size of a half-crown, and continued to discharge saliva profusely. The patient visited the hospital at intervals of a fortnight until the end of October, by which time the wound was no larger than sixpence, and the saliva still flowing from it abundantly. The man then left town for a month, at the end of which time I directed him to return, intending, if the cancer showed no disposition to redevelop, to perform an operation to relieve the fistula and restore the flow of saliva into the mouth. He duly presented himself at the end of November—more than three months from the time of operation—and to

my surprise I found the wound completely healed, and the normal flow of saliva taking place into the mouth. He had used by my direction a circular piece of sticking-plaster to cover the fistula, and it had evidently exercised enough closure to enable the duct to re-establish itself. At present no return of the epithelioma appears to be threatened, no disfigurement exists, as the wound has closed, partly by cicatrisation but chiefly by contraction, and his whisker hides the place. The only inconvenience he suffers is a slight sense of fulness when the activity of the gland is stimulated by food; this shows that a small sac exists in which the saliva collects before finding its way into the duct.

This case is of interest as showing how a natural process, assisted by so slight a means as the closure of the fistula by sticking-plaster, can re-establish the normal passage into the mouth, even when, as in this instance, the duct was completely divided at its exit from the front of the gland. In this particular case it was of moment to avoid a secondary operation, as it would perhaps have predisposed to a return of the original disease by causing renewed irritation.

As the second case is one in which operative interference with Stenson's duct became necessary, I may be allowed, before recording it, to point the description of my treatment by a brief allusion to the principal operations which have been recommended for the cure of fistula of the parotid gland or its duct. Salivary fistulæ in this situation may very naturally be divided into—

1. Those communicating directly with the gland.

2. Those communicating with Stenson's duct—(*a*) where the distal portion of the duct is obliterated; (*b*) where the distal portion of the duct is pervious.

With regard to the first class of cases but little need be said. They are of minor importance, and, as a rule, yield readily to treatment. Inasmuch as the principal ducts are uninjured, the closure of the fistula is easily affected by compression, or by cautery with nitrate of silver or the actual cautery; or, failing by one of these methods, the edges may be scarified, and a stitch or two inserted to bring them together.

Where the communication is with Stenson's duct, the treatment is much more difficult. If the buccal portion of the duct is obliterated, one of the three following operations may be selected:—

Desault's method.—A small hydrocele trocar and cannula is introduced into the fistula, and pushed forwards and inwards, in the normal direction of Stenson's duct, into the mouth. The trocar

is then removed, and a silk seton passed through the cannula into the mouth, and retained in position while the cannula is withdrawn. The thread is then fixed, so that one end passes into the mouth, and the other to the cheek. A compress is next placed over the fistula. The seton is worn for about three weeks, until the channel into the mouth is well established, when it may be withdrawn. The opening on the cheek can then be easily induced to heal, while the buccal opening must be kept dilated by catheterisation or the use of a tent of sea-tangle.

Van Buren's method consists in passing two fine silver sutures through the skin at opposite sides of the opening of the fistula, then dissecting back the canal towards the gland, so as to convert it into a free tube. An opening is next made into the mouth, the tube turned inwards towards it, and its orifice secured to the mucous membrane by the two points of wire suture. The wound in the cheek is then closed with sutures.

Deguise's method consists in passing a leaden wire from the fistulous opening through the tissues of the cheek in a direction backwards and inwards; the other end of the wire is then passed through the cheek, from the fistula, forwards and inwards. The loop is pulled into the fistula, and the ends twisted together in the mouth. The wire acts as a conductor for the saliva which follows it both forwards and backwards into the mouth. It is retained in position until the opening on the surface of the cheek has healed, and is then removed through the mouth. If a more rapid process is desired, a silk ligature may be used instead of wire, and should be tied with sufficient tightness to ulcerate through the included tissues.

In those cases where the distal portion of the duct remains pervious, none of these operations should be undertaken, unless the plan which I am about to detail should prove futile. It consists in catheterising and dilating the duct from its buccal opening, and was suggested to me by the recommendation of Professor Stimson, of New York, who, in his "Manual of Operative Surgery," says that "if the distal portion of the duct is still permeable, a leaden wire may be passed through it from the mouth into the proximal portion of the duct." I can best describe the procedure, as developed by me, by detailing the case in which I employed it:—

Case II.—T. A. T., a gentleman aged twenty-eight years, consulted me in the beginning of 1881 about a tumour the size of a filbert nut, which was growing on the anterior edge of the parotid gland on the right side. It

had deep attachments, and was evidently immediately over Stenson's duct, the fear of injuring which was present to me when recommending that the growth should be removed. I operated on it on March 6th; and I may here say that a subsequent microscopic examination, kindly made by Mr. Abraham, Curator of the Museum of the College of Surgeons, showed it to be an enchondroma.

Although the greatest care was taken in dissecting out the tumour—the fear of injuring the duct being vividly before me—I found my caution unavailing, as it passed directly through the enchondroma, and more than three-quarters of an inch of it was removed with the disease. A more unpleasant complication to exist in the case of a young man than one promising the establishment of a salivary fistula could not well be imagined. I resolved, however, to close the wound, endeavour to procure union, and trust to subsequent efforts to secure the discharge of saliva through the distal portion of the duct into the mouth. The coverings of the tumour were fortunately thick and enabled me to pass the sutures to a considerable depth, so as to oppose and draw together as much tissue as possible, in order the better to close the wound and obtain union of a considerable surface. I ordered a low and unstimulating diet.

No effort was made on the morning of operation to introduce an instrument into the duct by the mouth, as the patient was intolerant of more interference. The same evening the face had commenced to swell from the infiltration of saliva, and the next morning was greatly puffed, both eyes being closed by œdema.

On the morning following that of operation I succeeded in passing a No. 3 Bowman's probe into the buccal opening of Stenson's duct, its aperture being defined by a clot of blood impacted in it. A few hours later in the day I introduced about half an inch of a sea-tangle tent scraped very fine, and allowed it to remain for more than an hour. This dilated the opening to such an extent that I could pass a No. 1. (English measurement) olive-pointed, elastic urethral bougie into the duct and as far back as the edge of the parotid gland. Catheterisation with this instrument was performed twice a day until the sixth day. During this time trouble was experienced in pushing the instrument through the divided portion of the tube, which was evidently disposed to cicatrise and contract.

The swelling of the face attained its maximum two days after operation, and had almost entirely disappeared on the sixth day.

On the seventh day I introduced a piece of pewter wire (No. 16 B. W. G.) long enough to reach from the buccal opening to the anterior border of the parotid gland, and having a turn at its extremity one-eighth of an inch long, bent at a right angle, and projecting into the mouth. This was worn without intermission for two weeks, when it was finally

removed. It acted as a conductor for the saliva, and by its pressure enlarged the size of the duct. It occasionally required re-adjustment, and gave least inconvenience when bent into a slight curve with its convexity external. Being of soft material, it could easily be bent to a comfortable curvature after introduction by seizing the portion of cheek containing it and pressing it in the necessary direction. It was, however, most readily introduced when straight.

As soon as the œdema of the cheek subsided somewhat, it could easily be felt under the wound, which had closed by immediate union, that a sac was forming, and it was my practice to press the saliva and a little purulent fluid mixed with it into the mouth at each operation of catheterisation. This was no longer necessary when the wire bougie was worn, as the sac then emptied itself along the wire. By the time the wire was finally withdrawn—within three weeks from the time of operation—the sac had contracted, and a small, hard cicatricial mass remained in its place. This has since disappeared, and the patient suffers no inconvenience of any kind.

The case is instructive as showing how possible it is to prevent the formation of a fistula by means sufficiently simple. It is not, however, an easy matter to pass an instrument from the mouth into Stenson's duct, as its aperture is exceedingly small, and is well concealed by the valvular arrangement of the mucous membrane overhanging it. I have made a number of observations of the direction and position of this canal and its opening, with the result that I have found but slight departure from the position usually described in anatomical works. The direction of the duct is best indicated by a line drawn from the lower edge of the concha of the ear to a point immediately above the angle of the mouth; and its orifice, which is situated opposite the neck of the second upper molar, opens by a horizontal slit which is concealed by a fold of mucous membrane, in the under part of which it lies. The opening is only large enough to permit the passage of a No. 3 Bowman's probe, and is most easily found by placing the patient in a strong light, everting the cheek, drying it with a soft napkin, and watching for an escape of saliva. If this cannot take place the difficulty of finding the opening is greatly increased; a little saliva will, however, generally flow, even in cases of division of the duct. The point of the probe should be passed at first outwards, and then upwards and backwards in the direction of the canal.

So much difficulty attends the passing of a probe into the buccal opening of Stenson's duct, that I advise a surgeon who may divide the canal during an operation to pass a pewter wire of the size I

have indicated through the divided end of the distal portion into the mouth before closing the wound. The wire can then be adapted and worn from the time of operation, and will save much trouble to the surgeon and much inconvenience to the patient.

What happened in this case, and what it may be sought to induce an imitation of by anyone who is unfortunately obliged to divide the salivary duct in a similar fashion, was this—the duct being divided, and the skin sutured and caused to unite, the space left by the removal of the tumour became filled with saliva and puriform fluid. This was frequently emptied by probing and pressure; a sac formed in the space, and being kept empty by the pewter bougie which was worn, its walls contracted so as to re-form the proximal portion of the duct. The infiltration of saliva into the tissues of the face was very extensive, but began gradually to disappear as soon as the probing of the severed duct was sytematically performed. I am, however, sure that no mere probing and pressure, however frequently performed, would have kept the sac sufficiently empty to have allowed its contraction; this could only be effected by the constant presence of the pewter bougie, which gave no inconvenience, and which, from its pliable nature, permitted itself to be bent by pressing it through the cheek, in such a way as to prevent it slipping out of its position even during the act of mastication.

ART. III.—*Some Remarks on Aural Therapeutics.* By H. MACNAUGHTON JONES, M.D., F.R.C.S.I. & E.; Professor of Obstetrics and Gynæcology, Queen's College, Cork; Surgeon, Cork County and Ophthalmic and Aural Hospitals.

A RECORD of a few of the most important recent advances made in aural therapeutics may not be devoid of interest to the general readers of this Journal. Great as has been the improvement in the acquisition of otological knowledge and the wider teaching of otology in the medical schools, still much remains to be done ere the management of aural affections is brought to the same average standard of perfection as that reached in the treatment of other organs than the ear. This is not a condition of things that need cause us surprise. Otology, as that science is now understood, is of recent creation. The old haphazard and bungling empiricism of a few years back has given place to methods of diagnosis and treatment as complete as any arrived at in other departments of

surgery, and equally important in the every-day practice of the general practitioner. It is true that in a large proportion of cases of deafness we must acknowledge ourselves baffled in affording relief, and we can do little to palliate, to arrest, or to cure. But even this knowledge is something gained. It saves our patient from the meddlesome, perhaps painful and mischievous, interference, the blisterings and leechings of our predecessors. The surgeon can now quickly come to a conclusion in a given case of deafness, from its history and symptoms, as to the possibility of effecting any good and the propriety of adopting any course of treatment, or how far he may be justified in submitting a patient to manipulative interference, which, so far as the result desired is concerned, may be purely experimental. He is enabled to sift those cases in which all the chances are against the patient from those in which there is a balance of probabilities in his favour. He can place this balance fairly before the patient, and the latter cannot then, in case of failure, visit the ill-success of treatment on the surgeon. The recognition of otology as a distinct branch in many schools, and the appointment of a special teacher, has done much to diffuse a knowledge of the science amongst the rising members of the profession. The admirable literature of the subject, within the reach of all practising physicians, has facilitated its study, and leaves no excuse for ignorance on the part of any man with ordinary application. The intimate connexion of the throat and ear, shown clinically in the dependence on the former of many of the morbid states that require the assistance of the aural surgeon, has necessitated a wider study of the affection of the naso-pharyngeal tract. The past few years have been rich in valuable additions in the ætiology and treatment of diseased states of the ear. I can only briefly touch on a few of the more important.

Tinnitus Aurium.—The dependence of this unpleasant symptom on a paresis of the tubal muscles and velum palati has been proved by Weber Liel, the defect in innervation causing a disturbance of equilibrium in the tympanic apparatus, with collapse of the Eustachian tube, and resulting in abnormal contraction of the tensor tympani. Immediately intratympanic and intralabyrinthine disturbances ensue, affecting both the circulation and nutrition of the tympanum. Nor is it unusual for laryngeal paresis to accompany the pharyngeal. A husky voice and an inability to read aloud or to sing the high register is present with the aural trouble; and in these phenomena we have an explanation

of the fact that subjective noises, functional disturbances, precede the decrease in the hearing power and the accommodative range of hearing in differentiating and discriminating sounds, as in conversation. So this form of tinnitus is frequently a prelude to catarrhal and ankylosed states of the tympanic cavity. This is most important, as it opens to view the obscure forces at work in that large class of aural cases affected with deafness which is slowly but surely progressive, and in which, early in the affection, we recognise but few objective signs in the auditory apparatus. Later on the consequences are seen in the contracted membrana tympani, the foreshortened malleus, immobility of the drum-head, &c.

In this paretic origin of tinnitus we have an explanation also of the noises that accompany anæmic states, rhythmical tinnitus, from over-work, worry, anxiety, and want of rest. We understand also the importance of early recognition of the cause of the tinnitus. Weber Liel's intratubal electrode for galvanisation of the tensor tympani can be passed into the Eustachian tube, and a weak constant, or induced, current applied, or the muscles about the faucial orifice—the velum palati—may be galvanised by the ordinary laryngeal electrode of Mackenzie. This I use myself, and have found of service. Or, as Turnbull recommends, the rheophore can be passed into the auditory meatus, or the probe, as used by Mr. Field, and the membrana tympani galvanised externally. The benefit derived from quinine, bathing, tonics, iron, strychnine, bromide and phosphide of zinc, change of air, mental rest, moderate physical exercise, is explained by the paretic origin of the noises; while the frequent association of follicular states of the pharynx, relaxed and elongated uvula, hypertrophied tonsils, with the general condition of innervation, proves the necessity for attending to the throat complications in these cases. Dr. Turnbull, of Philadelphia, has entered fully into the cause of vascular tinnitus and that due to hallucinations, as also into the relation of this form of tinnitus to insanity. In nitrite of amyl, hydrobromic acid, hydrobromate of quinine, hydrobromic ether, bromide of potassium, we have our principal means of relieving the arterial tension. Nor must we forget that in gouty and syphilitic states, in consequent renal changes, in cardiac disease, we frequently find the source of the aural complication. Often in a case of tinnitus, following on temporary collapse of the Eustachian tube, or sea-bathing, and after ordinary naso-frontal catarrh, relief may be given by a few inflations with Politzer's

inflator, and the intratympanic injection of a warm solution of chloride of ammonium or carbonate of soda (4 grs. ad. ℥i.). There can be no question of the truth of the view of Dr. Ladreit de Lacharrière, that we have in vasomotor innervation the origin of many of the cases of tinnitus, and this is in accordance with the view of Weber Liel, and explains the reason of the vascular tinnitus in debilitated states and in nervous exhaustion.

Tenotomy of the Tensor Tympani.—In connexion with the subject of tinnitus I may refer to the operation of tenotomy of the tensor tympani. We here have to fall back on the experiences of Weber Liel, Miot, Urbansschich, Schwartze, and other Continental aurists, who have performed the operation a sufficient number of times to speak definitely of the results. There can be no doubt, from the evidence of Weber Liel—to whom we specially owe the practical success of this therapeutic measure—that a large number of cases of tinnitus are relieved by tenotomy for which every other step has failed. By this operation, says Weber Liel, "we are enabled, in a large percentage of cases of so-called nervous ear disease, to afford relief and arrest its progress. The tinnitus disappears, or is greatly modified." Weber Liel classifies the cases in which tenotomy is indicated:—(*a*) those in which the diagnosis is not far advanced, and the patient can hear when spoken to directly into the ear; (*b*) those in which the diagnosis is associated with tinnitus; (*c*) those cases in which, from the appearance of the membrane, it is probable that there are adhesions in the zone of the tensor muscle, or a retraction or contraction of it; (*d*) those cases in which slight temporary benefit is produced by suction or rarefaction. He observes that the megrim and giddiness frequently disappear the day after the operation; the other ear, not operated on, is benefited, and the secretion of cerumen is promoted.

The tensor tympani, when in a state of strong tension, reacts through the chain of ossicles on the membrana tympani, on the intratympanal circulation, on the oscillations in the labyrinth, prevents the necessary equilibrium which should exist in the intralabyrinthine apparatus, gives rise to ankylosed states of the tympanic articulations, fixation of the ossicles, and corresponding anomalous conditions of the stapedius muscle. It is true that these conditions are frequently attendant or consequent upon abnormal states of the Eustachian tubes, but the restoration of their patency or attention to the tubal muscle does not prevent the deafness and tinnitus. Dr. Weber Liel speaks from an experience of 500

operations on the *living* subject. He insists on the steps of the operation as he performs it being carried out, and the necessity for subsequent treatment by air douche and koniontron.

Ménière's Disease.—In close relation to tinnitus is the affection known as Ménière's disease. Dr. Guye, of Amsterdam, has written the most important summary of the ætiology of this peculiar affection, or rather the groups of symptoms which it embraces. He brought a series of propositions before the Congress at Amsterdam (1879). The symptoms of vertigo and sensation of rotation he ascribes to abnormal irritation of the nervous terminal apparatus of the semicircular canals, to inflammatory processes in the middle ear or semicircular canals. These latter may have their origin in sea-bathing, exposure to cold, naso-pharyngeal attacks of inflammation or nasal anomalies, syphilis, or fissures of the skull during cicatrisation. Dr. Guye differs from Mach and Crum-Brown in that he thinks that the sensation of rotation is produced in the direction of the irritated canal. The sensation of rotation in the left horizontal canal is a sensation of rotation to the left, and in the right horizontal semicircular canal to the right. I have myself had a few well-marked cases of labyrinthine vertigo with tinnitus in which the motion was towards the side of the affected ear. Dr. Guye speaks highly of quinine, as recommended by Charcot, noticing how paradoxically quinine will frequently cause deafness, while it removes the tinnitus previously existing. Attention to the Eustachian tube, tubal electrisation, attention to the naso-pharynx, the administration of hydrobromic acid, bromide of potassium combined with iodide, bromide and phosphide of zinc, strychnine, and iron salts, may be indicated according to the circumstances; while, to relieve the nausea and sickness, such medicines as hydrocyanic acid, bismuth, oxalate of cerium, and ingluvin, may be given. The ventilation of the tympanum and the imprisonment of mucus in it must be looked to, and in some cases intratympanic warm injection of chloride of ammonia or iodide of potassium will be found of service.

Electricity in Aural Affections.—This therapeutic means of treating various degrees of deafness with or without tinnitus may be referred to here. To Dr. Woakes we are specially indebted for the correct application of the principles which should guide us in the use of electricity in paretic states. Mr. Field, of St. Mary's Hospital, has also devoted a great deal of attention to the subject.

I have before referred to the views of Weber Liel on intra-

tubal galvanisation of the intrinsic muscles, and the dependence of deafness and tinnitus on a paretic state of the velum palati and tubal muscles. Dr. Woakes drew attention to the influence of electricity in promoting congestion, through its action (Morant and Dastre) on the vessels to which vasomotor filaments are distributed; and hence inferred that we have in it an agent which may act for good or evil, as, while it restores the motor power in the muscles, it produces congestion of the middle ear. He has nearly abandoned the use of the constant battery for therapeutic purposes, using only a weak induced current, and that once weekly. There can be no doubt of the value, in paretic states of the tubal muscles, of electricity. Mackenzie's galvaniser is as convenient an instrument as we can use, completely insulated as it is up to the point, and so easily manipulated. Mr. Field, in cases in which he suspected paralysis of the intrinsic muscles, presses the sponges of the battery into the auditory passages, or uses a fine probe. I have myself given up this latter method of employing electricity. Many patients refuse to bear the direct application with the rheophore, even of a very weak current, and the results were disappointing. But the application of the electrode to the orifice of the Eustachian tube and velum, or by means of sponges externally, will be found more efficacious and easily submitted to by the patient.

Microbes and Fungi as they affect the Ear.—Perhaps there has been no more important advance in aural therapeutics in recent years than the light thrown on the relation of diseased states of the external and middle ear to certain parasitic, miasmatic, and zymotic causes. The dependence of a variety of inflammatory affections in other parts of the body, or the presence of micro-organisms in the tissues of the inflamed part, was surmised by Pasteur. The researches of Koch and Toussaint and Klebs, following on the discoveries of Pasteur himself, led up to this. It must be interesting to see how their work has influenced the treatment and thrown a light on the therapeutics of aural diseases.

I have elsewhere drawn special attention to this subject (paper on "Zymosis in Relation to Aural Therapeutics," *Specialist*, November, 1881). I may briefly recapitulate some of the facts therein referred to. Weber Liel in 1871, again in 1874, and later on in 1877 and 1878, drew attention to the influence of malaria in causing neuralgia of the ear, otitis, intermittent aural attacks, abscess of the meatus, and mastoid inflammations. He gave to

these intermittent paroxysms of pain, with fulness and giddiness and tinnitus, the name "*otitis intermittens.*" The pain was distributed to the branches of the trigeminus. Its association with unhealthy dwellings and the spring season of the year was noticed. The spleen in some cases was found enlarged. Quinine gave great relief. In 1878 Dr. Patterson Cassells, of Glasgow, called attention to the influence of foul air emanating from defectively constructed or badly trapped sewers, drains, &c., in producing acute otitis media. Holz and Orne Green both remarked this malarial and zymotic influence. Previously Dr. Löwenberg, of Paris, had remarked on the prevalence of furunculus in springtime, and that an "epidemic" of furunculi was not uncommon. In 1880 he noticed the same epidemic character of this painful affection in a mild form. M. Denucé had previously called attention to the association of furunculus with certain trades and occupations in which decomposing organic substances were likely to act as exciting causes. M. Pasteur injected the liquid containing the germs found in aural furunculus under the skin of the rabbit, and obtained as a result abscesses with identical organisms. The consecutive abscesses were of a modified type, and were more readily cured. Dr. Löwenberg cultivated the microbes in beef-tea, and he looks on their presence as characteristic of furunculus and furnishing the test as between this form of inflammation and ordinary abscess. In the latter disease he remarks with Weber Liel that the meatus is not entirely and equally swollen, rather have we isolated sensitive spots, which are prominent, and which rapidly become globular. He would account for the occurrence of furunculous inflammation in spring and autumn by the prevalence of heavy rains, which, acting on the soil, cause the imbibition of organic material, which in its turn vitiates the drinking water and that used for washing purposes.

Again, the occurrence of furunculus in persons suffering from glycosuria and diabetes, he explains in two or three ways—the diminished vitality, the lowered temperature, the hygrometric effect of the retained saccharine elements in the blood on the tissues, lowering their vitality, the presence of the sugar itself, and the increased risk of auto-contagion from pre-existing boils—all such conditions are favourable to the formation and development of microphytes. Their presence in the blood, the resulting abscesses, with involvement of the sinuses, explain the ataxo-adynamic fever, and occasional thrombosis or pyæmia. Koch's and Kleb's

experiments and observations throw a light on all the clinical facts observed in the secondary abscesses, and the symptoms of thrombus occasionally following recurrent furunculus. The theory of auto-contagion explains the recurrence from communication occurring from clothes, dressings, fingers, &c. Thus we see that all ordinary zymotic influences are at work in the ætiology of furunculus—for example, season of year, temperature, atmospheric moisture, rainfall, malaria, and defective sewerage, contagion, the curative properties of quinine (as recently shown in its peculiar destructive effect on the microphyte of intermittent fever). All these facts explain how the therapeutical value of antiseptics came to be almost empyrically understood and practically availed of before aural surgeons understood their true mode of action, as alcohol, carbolic acid, boracic acid, salicylic acid, iodine, iodoform, and sulphocarbolate of zinc. Weber Liel recommends early and free incision of the furunculus to the periosteum. He relies on a bath of rectified spirit and corrosive sublimate to arrest the development of the boil, the meatus being filled with the solution, and the patient reclining for half an hour. He also employs the subcutaneous injection of carbolic acid, 2–4 drops of a 5 per cent. solution. He finds this latter treatment arrests the development of the inflammation, and allays the sensibility. Boracic acid is the favourite remedy of Dr. Löwenberg, either in the form of fomentation or in alcoholic solution, or, as Bezold recommends, in fine powder. Dr. Löwenberg also advises early incision. I cannot too strongly insist on the importance of this step in arresting furunculous inflammation. I use baths of boracic and salicylic acid combined, or warm douches of these antiseptics and a sedative. The syphon (nasal) douche, with rubber ear-piece, I find very grateful. I have had the best results from bromide of ethyl, as recommended by Turnbull, in the relief of pain, applied locally with glycerine. Leeches inside the concha, supplemented by vesication over the mastoid, will often relieve the pain and sensitiveness. But equally important as any other portion of the treatment is the sustained and systematic cleansing of the ear after the subsidence of the first attack of inflammation—the careful removal of all epithelium or pus or cerumen that may have remained, and the continuance of the antiseptic plan of treatment for some time. For this purpose nothing surpasses an application of iodoform as an ointment with balsam of tolu and vaseline. This can be worn at night on a small piece of wool in the meatus.

With reference to this subject, see a series of interesting papers by Dr. Löwenburg in *Le Progrès Medical*, July, August, Sept., 1881, *Knapp's Journal* and the *American Journal of Otology*, 1879; and various papers from time to time by Weber Liel in *Monatschrift für Ohrenheilkunde*, *German Clinical Studies*, *German Practice of Medicine;* Cassell's paper in *Edinburgh Med. Journal*, April, 1878.

PHYSIOLOGICAL AND THERAPEUTICAL EFFECTS OF HYOSCYAMIA.

In a valuable contribution to the June number of his journal, *The Archives of Medicine*, Dr. E. C. Seguin, of New York, sums up as follows the experience of all observers with reference to the effects of the drug:—1. It acts as a mydriatic, but whether more fully or longer than atropia remains to be settled. 2. In small doses it reduces the cardiac pulsations, increases arterial tension, and checks the loss of body heat. It also produces hallucinations and delirium. It may cause a fall of axillary temperature, and occasionally a rash. 3. In large doses it immediately increases the pulse rate, produces a seeming paralysis or motor debility, and sleep. 4. Hyoscyamia is indicated in mania, restlessness, delusions of persecution, dementia with agitation and destructiveness, epileptic mania, insomnia, rapid action of the heart, epilepsy (?), status epilepticus, chorea, paralysis agitans, hysterical spasms, neuralgia, tremor, &c. 5. In mania and allied states it produces sleep as certainly, or even more certainly, than chloral, without any bad after-effect, unless it be occasional gastric disorder. 6. In cases of delusions of persecution or suspicion it has produced a positive cure. 7. In paralysis agitans it achieves what no other remedy has ever done—viz., arrests the movements for four hours or more without insensibility. 8. In the status epilepticus it shortens the attack materially; perhaps better than any other single remedy. 9. It is a diuretic of no mean powers. 10. The curative power of hyoscyamia does not appear to be great. In some cases of insanity its use has been followed by recovery, but, as a rule, we must look upon it as a narcotic, often speedier, more complete, and less objectionable than morphia and chloral hydrate. 11. In spasmodic diseases we can, so far, speak of hyoscyamia only as a palliative or ameliorating agent. He suggests that in cases of very acute chorea, where death is threatened by incessant motion, hyoscyamia, given hypodermically, may prove of benefit by securing muscular relaxation with certainty, thus allowing the patient to rest, and giving time for other remedies to act. Dr. Seguin gives the following prescription for a hypodermic solution:—℞. Hyoscyamiæ (Merck's crystallised), gr. i.; glycerini, aquæ destill., āā, ♏. c.; acid. carbolic., pur. gr. ss. Mix, and filter with care. From ♏. ii. to iv. ($\frac{1}{100}$th to $\frac{1}{50}$th gr.) may be injected; or the drug may be administered internally.

ST MARY'S HOSPITAL
RADFORD
LIBRARY
MANCHESTER

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Om Typhus Exanthematicus; Afhandling grundad på egen Erfarenhet jemförd med andras. Af Dr. F. W. Warfvinge. Stockholm: P. A. Nymans Tryckeri. 1880.

A Treatise on Exanthematic Typhus, based on individual experience compared with that of others. By Dr. F. W. Warfvinge. Stockholm: P. A. Nyman. 1880. 8vo. Pp. 199.

For the following abstract of Dr. Warfvinge's interesting contribution to the literature of typhus fever, we are indebted to the *précis* in French which is appended to his treatise. Incidentally we may observe that the work was awarded the Regnell Prize on October 1, 1878.

Typhus Exanthematicus, which had not appeared in Stockholm for twenty-five years, prevailed epidemically in that city during the years 1870, 1872, 1874, and 1875. The author's work is based on the study of 2,239 cases of this disease, observed during the epidemics in question in a hospital for "typhoid" affections.

Commencing with the *ætiology* of typhus, Dr. Warfvinge insists on the specific difference which exists between this form of continued fever and typhoid fever; he quotes all the arguments in favour of this distinction, and refutes the objections which have been put forward against it. Typhus has raged epidemically from time to time in Stockholm, while typhoid was endemic there at the same time, the number of cases of this latter malady varying from year to year only in an insignificant manner. From this the complete mutual independence of these diseases in their perfectly accidental coincidence is a necessary sequence.

Typhus continues to increase in prevalence from the commencement of winter until spring—a period during which the poor remain crowded together in rooms badly, or not at all, ventilated—and it disappears when summer comes. But exactly the opposite is observed in regard to typhoid fever, as is clearly demonstrated in a table illustrating Dr. Warfvinge's work (Fig. 1, page 7).

Typhus has occurred most frequently (pretty often to the number of 20 to 50 cases) in foci which developed in the city and in houses tenanted by a too numerous and indigent population, whereas not a single case of typhoid has taken its origin from these foci. A person who has recovered from typhoid most usually remains henceforth inaccessible to that disease, while he is by no means so as regards typhus, and *vice versâ*. In support of this view the author cites a good many cases—at the hospital twelve convalescents from typhoid contracted typhus, and in the same way the author observed four cases in which individuals recovered from typhus subsequently took typhoid. The specific distinction between the two diseases also declares itself under the other ætiological factors in the same way as under those of symptomatology and of pathological anatomy.

Typhus is transmitted directly from one individual to another; it presupposes a "contagium," and the author gives in illustration of the eminently contagious nature of the disease a number of examples, of which we shall quote the following:—At the hospital four physicians, twenty-two attendants on the sick and nurses, besides fifty-five patients under treatment for other diseases, contracted typhus from contact with persons affected with it, and several took it in other hospitals. It was quite a common occurrence for all the members of the same family to reach the hospital simultaneously or at short intervals stricken with typhus, and for them to be frequently followed by all or almost all the other inhabitants of the infected house. The author calls attention to this tendency of the disease to form foci of infection, as well as to the fact that the danger of contagion increases directly as the frequency of contact between the healthy and the sick, but that it diminishes in the presence of ventilation, which dilutes the contagious matter, and that the separation of those infected puts a stop to the further spread of the disease. In addition he cites examples of typhus transmitted, by infected individuals, into places which had been previously free from the disease. Just the reverse was noted in the cases of typhoid fever observed by the author. He did not meet a single case which betrayed a contagious property peculiar to this disease, which also showed but little disposition to form foci of infection.

As shown in a Table on page 44 of Dr. Warfvinge's book, typhus generally began to prevail epidemically in the month of December, and its frequency thence increased very rapidly to

attain its maximum between January and May. Afterwards, so quickly did it diminish during June and July that August presented only a few cases, and the epidemics almost entirely ceased during the months of September, October, and November. The proof that this fact is not accidental is that it repeated itself with some slight differences during four epidemics.

The author connects these facts with the circumstance that in Stockholm the indigent class, within the limits of which the disease almost exclusively confined itself, was obliged—principally of late years—in consequence of the want of lodgings, to live crowded together in close and non-ventilated dwellings. When winter, with the want of ventilation which accompanies it, has lasted a certain time, typhus epidemics break out, to decline rapidly and to cease with the warm season, during which the indigent classes live much more in the open air.

If the author explains the effect of this anti-hygienic factor on the spread of the disease by the production of a favourable soil, yet in none of the epidemics in question has he met with a single example to prove that a spontaneous origin should be attributed to typhus, and he attempts to show that all the cases cited, especially by Murchison, in support of this autochthonous origin of the disease can be explained in quite another way, remembering how easily the disease is communicated and how protracted is the retention of the virus by walls, clothing, &c.

Sex.—Of the patients, 1,359 were males, and only 880 females. From this, however, it does not follow that typhus has a predilection for the former. The preponderance of male patients held only in the years 1874 and 1875 (in the proportion of 2 to 1), when a large number of labourers out of work were crowded together in Stockholm; and for this reason it was confined exclusively to the ages between 15 and 45 years; in the other two epidemics the two sexes were equally represented.

As regards *age*, the youngest patient was only 11 months old; the most aged was 77 years. As a diagram proves for demonstration, age predisposes in a different way to typhus and to typhoid. Up to 10 years, the frequency of both diseases remains the same; but, whereas the number of typhus cases undergoes only slight variations from 10 to 50 years, the frequency of typhoid fever rapidly increases from 10 to 20 years, to fall subsequently quite as quickly.

Having described the course of the disease, illustrating his

remarks with a clinical history of some cases, Dr. Warfvinge passes on to an account of the different symptoms of typhus.

He first gives a detailed sketch of the conditions of the axillary *temperature.* With a rise sufficiently abrupt, it may sometimes go as high as 40·5° C. (105° F.) on the evening of the second day, and ordinarily attains its acme on that of the fourth or fifth day. From this date, and with morning remissions of half a degree centigrade (0·9° F.), or a little more, the same temperature is generally maintained for 6 or 7 days—sometimes (in the mildest cases) for a shorter time, only 2 or 3 days; sometimes for a longer time, up to 12 days. During this period of acme of temperature, the maximum has fallen on the fourth to the sixth day, sometimes a little later; it has rarely been below 40° C. (104° F.), and never above 41·8° C. (107·3° F.), with the exception of elevations to 42·3° C. (108·3° F.) in the death-agony. With more decided morning remissions, the temperature then decreases during 2 or 3 days (the period of decline or defervescence), to present towards the end a fall which is generally very rapid. Rarely, however, has this defervescence been rapid enough for the fall of temperature to normal or below it—that is, to 35° C. (95° F.) and less—to be brought about in the space of 12 hours. It should take most frequently between 36 and 60 hours, very seldom longer; and never has there been a lysis, properly so called. In typhoid fever the increase of pyrexia goes on more slowly; but, on the other hand, the temperature remains longer at a typical height, whence it descends only by degrees and by morning remissions, which are more and more pronounced.

While the fever terminated most frequently—that is to say, in 35·7 per cent. of the cases—at the beginning of the 15th or of the 16th day, the critical fall of temperature was effected more rapidly (from the 9th to the 14th day) in 33·5 per cent. of the patients. This occurred for the most part in children, whereas the remaining 30·8 per cent. of the cases, in which the high temperature continued longer—that is to say, until the 17th to the 21st day—were furnished in greater part by adults.

Dr. Warfvinge shows by figures that it is not, as is contended, the degree of temperature which renders an attack of typhus more or less grave. Doubtless the graver the cases of typhus have been, the higher also have been the maximal temperatures; but we see likewise that a high maximal temperature may rule in mild cases just as a low maximum may occur in grave as well as in fatal attacks. We can only say (as in the case of typhoid fever) that

the graver the type of typhus, so the elevation of temperature is better marked simultaneously with the other symptoms. This rule, nevertheless, presents numerous exceptions. In fatal cases the highest ranges of temperature have not been more common than in the most severe attacks followed by recovery; whence it follows, that the elevation of temperature cannot be the cause of death, so much the less, since in the majority of fatal instances the heat of the body for a certain time before death is reduced to a moderate or low degree. In the death-agony, most frequently, an elevation of temperature is produced, which is usually very considerable (to 42·3° C.).

The rapidity of the *pulse* corresponded tolerably closely to the temperature. *Epistaxis* occurred in 5·09 per cent. of the cases, with a mortality of 8 per cent. In the *blood* the red corpuscles showed a continued but slight reduction in number (from 5,000,000 to 4,200,000 per cubic millimetre).

The Cutaneous Exanthem.—This very important symptom of typhus shows itself tolerably soon, most frequently on the fifth day. The maculæ appear all at once in the course of a day or two, and not by degrees; they are at first of a pale red colour, and disappear on pressure. After a time they become darker, taking on a brownish tint, and then they can no longer be made to disappear altogether on pressure; later on their colour becomes livid, and some are in the serious cases transformed into true petechiæ. The eruption is sometimes reduced, principally in very young children, to a diffuse transitory redness (erythema). With this exception there quickly develop from the redness above-mentioned more distinct specks, without being always clearly defined, slightly or not at all elevated, irregular, generally numerous and scattered over the whole body, sometimes even on the face, especially in young patients. The fully developed eruption, as a rule, has commenced to disappear with the subsidence of the temperature; the petechiæ have persisted after death. In 16·4 per cent. of the patients the exanthem was wanting or was very slightly marked, and this most commonly in children.

A *bronchial catarrh*, most frequently very benign in character, was present in 78 per cent. of the patients; in grave cases hypostatic congestion with collapse of the air-vesicles became established in the posterior and inferior parts of the lungs.

As to the *digestive system*, the *tongue* was in the majority of cases (63·8 per cent.) moist and more or less furred, dry in only

36·2 per cent.; this usually at the end of the first or the beginning of the second week, and with a greater frequency according as the patients were aged and the cases severe (mortality 24·2 per cent. in the cases in which the tongue was dry). The *bowels* were generally regular (in 55·5 per cent.) or costive (24·5 per cent.); in the remaining 15·1 per cent., in which they were relaxed, this occurred—with some exceptions, 4·9 per cent.—only to a very trifling extent, and the symptom was essentially transitory (mortality in these cases with diarrhœa 23·3 per cent., against 15·1 per cent. in the others). *Vomiting* was not a very common symptom (7·9 per cent.), and appeared more frequently at the beginning of the illness than in the course of it or during convalescence. *Enlargement of the spleen* was observed in the majority of the cases, but usually in a moderate degree.

As regards the *urine*, Dr. Warfvinge made quantitative analyses of the urea and of the chlorides in three cases—analyses of which the result was that the urea was increased to such a degree that it was found to be 1·7 to 2·5 times more abundant than in healthy men on the same diet. The excretion of urea, which does not, however, correspond with the degree of temperature of the body, was greatest during the stage of crisis. As to the chlorides in the urine, they were considerably diminished during the fever, so that often only traces of them remained. The urine was albuminous in 67·7 per cent. of the 1,660 cases which were examined, and the frequency of albuminuria increased, with the age, from 20 per cent. in children under 5 years, to 82 per cent. in patients above 55 years. The mortality rose successively from 4·3 per cent. to 32·0 per cent. with the degree of albuminuria—a symptom which was observed at the earliest on the fourth day, and generally lasted about eight days, sometimes longer, sometimes shorter.

The symptoms referable to the *nervous system* usually assumed the form of a certain degree of stupor and of somnolence. The loss of muscular power is very common and well-marked, so that as a rule the patients take to their bed after one or two days. Delirium was present in 31·1 per cent. of the cases (mortality 24·1 per cent.), impairment of hearing in 9 per cent. (mortality only 5·5 per cent.), subsultus tendinum in 3·7 per cent., involuntary dejections with profound prostration in 6·8 per cent. The author disputes the alleged dependence of the nervous symptoms on the rise of the temperature, the intensity of these

symptoms not being in direct ratio to the amount of the rise of temperature, and their character presenting a manifest resemblance to certain narcotic poisons.

The difference presented by typhoid fever as to the state of the temperature having already been pointed out, the author here sets forth the differences between the two fevers as to the other symptoms. As the modifications of the pulse closely correspond to those of the temperature in the two diseases, the pulse-curve proves essentially different in one and the other. Epistaxis was much more frequent in typhoid fever, occurring, namely, in 25 per cent. of the cases. The characters of the eruption furnish, next to the temperature observations, the best data for the differential diagnosis of the two fevers; the rash of typhoid does not appear until later, most commonly in the first half of the second week. The spots are rose-coloured, rarely of a deeper red, elevated, regular, small, well defined, usually very scanty in number, and always disappear on pressure. The eruption does not develop abruptly, but little by little, some spots fading while new ones are appearing. A mild bronchial catarrh showed itself in 88 per cent. of the cases of typhoid.

In this disease diarrhœa was much more frequent (41·6 per cent.) than in typhus, in which the motions never presented the characteristics of those of typhoid. The tongue was in the latter disease much more frequently dry (in 90 per cent). On the other hand albuminuria was a little less frequent in typhoid (in 52·3 per cent.), and it only showed itself later. Stupor and somnolence were not as common in typhoid, and they appeared later, as did also delirium and prostration of strength.

To return to the epidemics of typhus, *complications* and *sequelæ* of a certain gravity were not frequent. They are set out in a table on pages 146 and 147. There were, amongst others, 35 cases of erysipelas, 52 of parotitis, 29 of suppurative adenitis and of subcutaneous or intermuscular abscess (amongst these were three cases of abscess in the borders of the larynx, of which two proved fatal and one was cured by tracheotomy), 35 of bedsore, 5 of spontaneous or embolic gangrene (of a toe, the prepuce, the nymphæ, the cheek, a circumscribed piece of lung with consecutive pneumothorax), 63 of pneumonia, 40 of pleurisy, 7 of icterus, 1 of peritonitis, 2 of intestinal hæmorrhage.

In reference to the *periods* of the disease, that of incubation may generally last for about two weeks. There was no prodromal

period, properly so called, and the period of invasion, during which the temperature underwent a rapid rise, lasted from 4 to 5 days. Almost simultaneously with the eruption of the exanthem came the period of acme of temperature, which most often lasted from 6 to 7 days—the extreme limits being from 2 to 12 days. We may then estimate the period of defervescence at about 3 days. The *duration* of the fever varied, therefore, from 8 to 20 days—most frequently, or in 35·7 per cent. of the cases, from 14 to 15 days, the mean being 14·39 days. It was in general shorter in children than in adults. Convalescence was usually rapid. The onset of typhus, then, is sudden, so that we can easily determine the day of invasion, which is not the case in typhoid fever. Typhus also ends after a much shorter duration (about 2 weeks compared with $3\frac{1}{2}$ to 4 weeks on an average in typhoid), more quickly, and in a more thorough way.

The *mortality* varied during the four epidemics between 10·78 and 19·49 per cent., the mean being 15·94 per cent. It seems to depend little or not at all upon the seasons. Higher amongst males (17·8 per cent.) than amongst females (13·06 per cent), it presented this peculiarity—that it always rose more with the age of the patients—namely, from 1·1 per cent. in children to 80 per cent. in subjects above 65 years. [See the Table on page 160 and diagrams 21 and 22, of which the first shows also, by way of comparison, the mortality of typhoid fever, which does not exhibit a like increase with age, and (the most aged individuals excepted) varies little at the different epochs of life.] During these epidemics the fact was proved that the mortality is in direct proportion to the crowding together of the patients. The temperature of the body did not possess that prognostic importance which has been attributed to it; in general the intensity of the symptoms was in direct proportion to the amount of the eruption, in the same way as the degree of albuminuria influenced the prognosis. Of 15 pregnant women none died, two only aborted. The mean duration of the fatal cases was 14·49 days.

Always attaching the greatest importance to the temperature of the body and to the exanthem, Dr. Warfvinge passes to the *diagnosis* of typhus, which may be confounded with typhoid fever, measles, acute nephritis, acute tuberculosis, cerebral affections, &c.

As regards the *pathological anatomy* of the disease the author, in more than 300 autopsies of persons dead of typhus, never observed those alterations in the lymphatic system of the intestinal canal

which are so characteristic of typhoid fever; at most the spleen was, as a rule, found slightly enlarged and rather soft, but by no means to the same extent as in typhoid.

In *treatment*, prophylaxis occupies the first place. Therapeutical treatment, properly speaking, was expectant; fresh air, refrigerant beverages, ablutions with cold water, and sometimes baths between 30° and 25° C. (67·5° and 56·3° F.), acids, quinine, wine. The author did not, on the other hand, employ the cold baths which have been so highly vaunted, because he was unable to convince himself of the advantage of reducing the temperature by means of cold baths in such a disease as typhus, in which it can be demonstrated that it is not to the increase of temperature, but rather to a blood-poisoning, that the greater or less severity of the symptoms and the possibility of a fatal issue should be attributed. An equivalent reduction of temperature by means of baths is further very doubtful, while an augmentation by this remedy of the tissue waste of the body, already increased by the fever, is so much the more certain.

It will be seen from the foregoing analytical abstract of Dr. Warfvinge's treatise that he adds little to our knowledge of typhus and its epiphenomena. His book is, however, useful as a brief compendium on the subject of which it treats, and is interesting as showing how closely the type of typhus observed in Sweden corresponds to that of this form of continued fever with which we are unfortunately so familiar in some parts of the United Kingdom. With pardonable pride we note that Dr. Murchison is constantly quoted by the author, who fully recognises the inestimable service rendered to medicine by our illustrious countryman in his splendid monograph on the "Continued Fevers of Great Britain."

Annals of Chemical Medicine, including the application of Chemistry to Physiology, Pathology, Therapeutics, Pharmacy, Toxicology, and Hygiene. Vol. II. Edited by J. L. W. THUDICHUM, M.D. London: Longmans, Green, & Co. 1881. 8vo. Pp. 334.

THIS publication is, we think, one of great value, as it serves to bring under the notice of English readers, in a condensed and intelligible form, the more important results which are being achieved by the numerous workers in Physiological Chemistry, and which are most frequently published in journals not very readily accessible to those who do not live in large towns. It seems to us that the

summaries of these results are fairly given, although they are always accompanied by a running commentary or criticism in accordance with the peculiar views of Dr. Thudichum and his school.

Of the twenty-two articles in the present volume, seventeen are such summaries, the remaining five being original papers—three by the editor, one by Mr. George Thudichum, and one whose authorship is not given.

The summaries deal for the most part with subjects of great interest to physiologists and pathologists, and in some cases to practical physicians and surgeons. We would specially call attention to the articles on the hemisymmetry in the chemical constitution of gelatin; on the chemical constitution of the crystalline lens of the eye, with reference to the causes and conditions of cataract; on the albuminous substances, amides, amido-acids, and ammonium salts as sources of urea formed in the animal body; on the nature and function of the inorganic constituents and ingredients of food, tissues, and liquids, and on the production of rhachitis; on the albuminous substances of blood, serous and lymphatic liquids which contribute to the formation of fibrin; on the decrease of hæmochrom ("Hæmoglobin," *Rev.*) in the blood in diseases and under insalubrious influences; and on diabetic coma, its chemical causes and anatomical conditions.

Of the original articles the most extensive is a long paper by the editor, entitled, "Researches on the Chemical Constitution of the Non-phosphorised Group of Nitrogenous Principles in the Brain." This work has already appeared in the Report of the Medical Officer of the Local Government Board for 1879. In these Researches the author has been led to results which differ most materially from those generally held by physiological chemists. It will be for the future to decide what value is to be attached to Dr. Thudichum's work, and to say on which side the truth lies.

Another article by the editor on Anæsthesia by volatile alkaloids, as illustrated by opium-smoking, will be read with great interest by all physicians. From a laborious review of the literature of the subject of the use of opium among the Chinese, Dr. Thudichum is led to the conclusion that the accounts which reach us of the injurious effects of this habit are grossly exaggerated, and that, in fact, opium-smoking is for healthy persons, on the whole, an innocent and harmless enjoyment, while for therapeutical purposes opium is far better administered by smoking than by subcu-

taneous injection or by the mouth in the ordinary way. The number of diseases which yield, as if by magic, to opium smoking is said to be very great; but while we refer to the paper for further particulars, we will only quote part of what is said on the treatment of consumption by opium smoking:—"The use of the vapour puts a consumptive patient in a northern climate not only on an equal footing with a patient who resides in a warm climate, but it gives him the advantage to this effect—that while he is equally free from the fatiguing and useless cough, he fevers less than the patient in the warm climate, and, therefore, lives longer."

Article XVI. is headed "On Modern Text-books as Impediments to the Progress of Animal Chemistry (a Deduction);" and consists of a savage, and, as we think, in many respects most unfair review of Prof. Gamgee's recent work on "Physiological Chemistry." Who the author of this review is does not appear, but it is evidently inspired, if not written, by Dr. Thudichum. It is idle for anyone to speak in the contemptuous way in which the author does of Hoppe-Seyler and his school, and still more idle to speak of a "ring" of physiologists in this country who "sequestrate in the monastic sense" anyone who does not agree with them, and ignore the work of anyone who does not believe Hoppe-Seyler to be infallible. We cannot see what object the physiologists of this or other countries could have in conspiring against Dr. Thudichum, and if he and his works are, as we would say in Ireland, *boycotted*, we think it is in great part due to the strange and singular nomenclature which he affects, and still more to the vindictive bitterness with which he writes of his opponents. In our notice of the first volume of the "Annals" we had occasion to speak of the isolated position which Dr. Thudichum holds among scientific chemists, and we think it is much to be regretted that so able and zealous a worker should not be able to live at peace with his fellow-labourers in the same field. In saying this we are far from implying that the fault is all on the side of Dr. Thudichum, or that he has not grounds for his complaints; but we think if he expressed his grievances in a more conciliatory way they would be more apt to meet with attention, and the science to which he has made such valuable contributions would benefit.

However, whether this be so or not, for our own part we thank Dr. Thudichum most heartily for the new volume of his "Annals," and we are sure that any of our readers into whose hands it may come will feel equally grateful.

A Manual of Histology. Edited and prepared by THOMAS E. SATTERTHWAITE, M.D. London: Sampson Low, Marston, Searle, and Rivington. 1881. 8vo. Pp. 478.

THIS book is the work of numerous authors, and, like other similar productions, is of very different excellence in its different chapters. The first 127 pages are written by the editor, and contain the chapters on the general methods, blood, epithelium, connective tissues, teeth, and the general histology of the nervous system. The remainder of the book is contributed by other writers, but all Americans.

The first thing that strikes us, in looking over this manual, is its division into three parts—a division which seems to be purely arbitrary, and to have no relation to the subjects treated of in each part. It is true the whole of the first part is written by Dr. Satterthwaite, and might for this reason be separated from the others, but there are no similar grounds for a division of the second part from the third; and the following examples will show how the subjects are mixed:—In the first part we have the general anatomy of the nervous system; in the second that of the muscular system. In the first part we have the teeth; in the second the liver; and in the third the alimentary canal, also the pancreas, which is treated of in the same chapter with the spleen, thymus, thyroid, and pineal glands, and the pituitary body, while the salivary glands seem to be altogether omitted. The kidneys are described in the second part, and the excretory urinary passages in the third. The eye and ear in the second; the nose and taste organs in the third. The genital organs in the second; the mammary glands in the third. The skin in the second; the "thick *cutis vera*" in the third. We think such an arrangement might be readily improved.

Turning to the chapter on the connective substance group we again meet with a curious example of classification. "The connective substances are subdivided as follows:—1. Mucous or gelatinous tissue; 2. Adenoid tissue; 3. Neuroglia; 4. Fat tissue; 5. Fibrous tissue proper; 6. Corneal tissue; 7. Intermuscular tissue; 8. Tendon tissue; 9. Elastic tissue; 10. Bone; 11. Cartilage; 12. Enamel; and 13. Dentine." We cannot understand by what right enamel is included among the connective tissues, or why, if, as we are told, fibrous tissue is merely the adult form of mucous tissue, these should be separated; why tendon should be

separated from other forms of fibrous tissue, unless even a much more minute classification than that given be adopted; and why intermuscular tissue should be separately described, while the much more peculiar connective tissue surrounding the nerves is passed over altogether, and even in the chapter on the nervous system is dismissed in a few lines, which give a completely erroneous account of it.

We can notice only a few points in the chapters on the connective tissues. We are told that the intercellular substance of mucous tissue differs from albumen in not containing sulphur, but the histochemically important difference in behaviour with acetic acid is not mentioned. It is suggested that the formation of fibres in developing fibrous tissue is due to deposition of filaments of fibrin from the blood. The organisation of blood is spoken of as a well-established fact, and as of frequent occurrence. We are recommended to treat the fresh mesentery by acetic acid and glycerine, in order to see the parallel lamellæ of fibres of which it is composed. Elastic fibres are said to be very uncommon in tendon. We could readily multiply instances of statements which in our opinion are doubtful or erroneous, but we have given enough to show that in the account of the connective tissues, which may be taken as a test of the excellence of a histological text-book, while there is much here that is valuable, inaccuracies are not absent.

In the chapter on the general histology of the nervous system, we find on p. 109 one division of nerve terminations given, and on p. 123 another, neither being satisfactory. In describing the end bulbs of the conjunctiva they are continually spoken of as occurring in the cornea, and as regards the termination of nerve in muscle—one of the most difficult subjects in histology—the author states that it is "quite easily seen." From his description, however, we are disposed to think he has never seen it. The following is his account of the matter:—We are told that all that is necessary is to take a bit of muscle from the thigh of a recently killed frog and treat it with acetic acid and glycerine. The medullated nerves can then be traced. "Reaching the sarcolemma, it (the nerve) penetrates it at a prominence (*Doyère's eminence*). From this point it divides into fibrils, which form delicate networks, and one or possibly two filaments will be seen to enter an irregular body placed in the centre of the fibre. This body is highly nucleated, and may without much difficulty be

distinguished from the muscle nucleus, which lies either on the bundle or in it. This body is called the *motorial plate*. It is not certain, however, that the ultimate fibrils actually end there, for, in some instances, one is in connexion with one side and one with the other." We do not fully understand this description, as we do not know what the muscle nucleus and the bundle are, but we know that, whatever may be the case in America, in European frogs the motor nerves do not terminate either in Doyère's eminences or in motorial plates.

The chapter on muscular fibre is by Dr. Dwight. He thinks the striped fibre consists of a transparent, semifluid ground-substance, which is the contractile element. At intervals in this are placed transverse discs, each composed of a double layer of granules. These form the narrow dark band in insects' muscles, and, by an extraordinary confusion on the part of the author, are said to form the dim band in the muscles of mammals. The bright layer at each side of the narrow band owes its brightness to refraction of the light by the granules, although how this occurs is not clearly stated. The broad dim band (Querscheibe) in insects' muscles is the ground-substance where the light has not been refracted, and is said to be only occasionally visible in mammalian muscle, being confounded in the description with the thin stripe (disque mince of Ranvier, Neben or Endscheibe of German authors).

Dr. Dwight rejects the use of the polariscope as being valueless in the study of muscular tissue, also apparently the use of staining fluids, as no mention is made of such. In such a difficult subject we do not think any aid should be rejected, and if the author had employed the polarising microscope he would possibly have avoided some of the errors into which he has fallen.

The article on the blood-vessels, by Dr. Wendt, gives a very good account of these parts. The author believes that, under ordinary circumstances, a desquamation of the endothelium of the blood-vessels occurs, and that "the detached portions of such endothelia and their nuclei appear as free granules in the blood, where they have puzzled many observers, and have been variously called *microcytes*, *hæmatoblasts*, &c." He thinks this view is strongly supported by the proliferation and desquamation of the endothelium of inflamed serous membranes. He also claims to have followed, step by step, the formation of new blood-vessels from emigrated leucocytes.

In the chapter on the Liver, Dr. Abraham Meyer states his belief that the intralobular bile capillaries have proper walls.

The article on the central nervous system, by Dr. Amidon, contains several diagrams of the appearances seen on transverse sections of the medulla oblongata made at different levels, as well as a drawing indicating the sections which should be made in order to see the different nerve-roots and their nuclei. These will be found useful by those who are beginning the study of this difficult organ.

A special chapter by Dr. J. Collins Warren on the Thick Cutis Vera describes a peculiar and hitherto unnoticed arrangement of the fat in the skin of the back, outer side of limbs, &c. From the subcutaneous adipose tissue there extend through the skin columnar processes, each of which reaches to the base of a hair. From the middle of these columns two horizontal fissures, also partially filled with fat, pass off, and the coil of a sweat gland is found in the upper part of each fat column. When the lymphatic system of the skin and subcutaneous tissues is injected, the injection is seen to run in these fat columns.

In the chapter on the Mammary Gland, by Drs. Porter and Wendt, the views and drawings of Dr. Creighton are largely reproduced. The other articles call for no special notice.

The work contains 198 illustrations; some of these are original, but the greater number are taken from well-known sources.

There is a bibliography at the end of each chapter, which will be found useful. The type is large and clear, and the paper good, and there is a copious index.

A Treatise on Aural Surgery. By H. MACNAUGHTON JONES, M.D., &c.; Professor of Obstetrics and Gynæcology in the Queen's College, Cork; Surgeon, Cork Ophthalmic and Aural Hospital; Surgeon, Cork County Hospital; Physician, Cork Fever Hospital; Consulting Surgeon, County and City of Cork Hospital for Women and Children, and the Cork Maternity. Second Edition, revised and enlarged. Crown 8vo. Pp. 336.

IN this edition the author has re-arranged and to a great extent re-written his work, while several chapters have been added, and the book is brought well up to the present standard of aural therapeutics. The author has availed himself of the kind offices and valuable aid of Dr. Weber Liel, of Berlin, and of Dr. Lowenberg, of Paris, who, after a perusal of his first edition, gave him

many useful hints and suggestions. Not only this but Dr. Lowenberg's work on "Adenoid Tumours in the Naso-Pharynx" has been condensed and, by his permission, added in the form of a special chapter, and Dr. Weber Liel has revised the chapter on Tenotomy of the Tensor Tympani—an operation to which this distinguished aurist has devoted much attention. Dr. Morell Mackenzie has contributed to the portions of the work bearing on the throat, and the assistance of Dr. Turnbull, of Philadelphia, has also been sought and obtained. The chapter on Othematoma has been re-written by Dr. Ringrose Atkins, Resident Medical Superintendent of the Waterford District Lunatic Asylum. Add to all this, that the author brings to his task much original effort of his own, and an experience derived from the examination and treatment of upwards of 5,000 aural patients, and it might be hardly necessary to say more in order to recommend the book to our readers. However, we will briefly refer to a few points of interest.

The author regards those cases of tinnitus with but slight deafness, in which the noises complained of are musical sounds or the roaring or rushing of water, as the most unfavourable in a prognostic point of view. He has tried, amongst many other medicines, hydrobromic ether, recommended to him by Dr. Turnbull, and has had no better results than with other remedies of its class.

In cases of chronic purulent otorrhœa media, the author employs a syringe with a conical vulcanite nozzle covered with an India-rubber cap. This nozzle fits well into the meatus, and the patient being directed to hold the head forwards over a vessel, the stream is passed through the ear, and flows through the Eustachian tube and nostril. He is thus enabled to wash out the cavity of the tympanum, remove secretions, and clear the Eustachian tube. The author first washes out the ear in this way with a stream of simple warm water, and follows this up with an astringent or disinfectant solution, generally selecting a chloride of zinc solution, or one of chloride of ammonium or sulphocarbolate of zinc (gr. ii. to gr. iv. to the ounce), with a little glycerine or carbolic acid. We are very much struck by the confidence with which the author speaks of healing perforations of the membrana tympani. He says (p. 250):—"The healing of the perforation, which is generally a tedious process, is best effected by repeated topical applications of various stimulating and astringent powders and solutions. Talc powder, boracic acid (impalpable powder),

tannic acid, salicylic acid, nitrate of silver, chloride of zinc, sulphate of zinc, alcohol and glycerine, carbolic acid and glycerine, are some of those most frequently used with success. Having cleansed out the meatus and perforation well, the latter should then be thoroughly dried with cotton wool rolled on the aural probe, and then with this same probe the nitrate of silver or other solution carried well down to the perforation, and its margin touched." The author, according to the foregoing, finds, in general, that perforations of the membrana tympani due to purulent otitis media are capable of being closed by treatment. We can only congratulate the author on his success in this particular. At p. 252 the author adds—"I rely chiefly in all these cases on nitrate of silver (10 to 20 gr. ad ʒi.). I find it after various trials the most efficacious remedy for healing perforations."

At p. 249 the author makes the following very trite observation, in which we thoroughly coincide:—"I rely more on systematic attention and cleanliness in all otorrhœal troubles than on all other measures combined."

We could wish that physicians would read and lay to heart the weighty words of the author at pp. 269 and 270, on incision of the membrana tympani in the otitis media of scarlatina. He justly charges their ignorance of the indications for this simple operation in these cases, with the vast number of terrible instances of destructive inflammation of the middle ear and resultant permanent deafness occurring during and after scarlatina.

In speaking (p. 115) of that common cause of deafness—cerumen in the external meatus, the author refers to the frequent errors in recognising its existence on the part of general medical men, and the many cases of the kind in which blistering, leeching, and physic, are resorted to when simple syringing would have effected a cure. He does not mention that equally frequent, and, of the two, probably more serious error, in which every case of deafness is regarded as one of "wax," and gets a thorough syringing in the first instance—a proceeding not tending to the benefit of the membrana tympani, nor to the alleviation of tinnitus in cases where no cerumen is present.

The author (pp. 238, 239, 240) is an ardent supporter of the use of intra-tympanic injections in cases of chronic simple catarrhus medius. He has not the slightest doubt but that they really do reach the tympanum, and do not act merely through their influence on the Eustachian tube, nor has he ever, like

Wreden, seen any ill result from their use, although he has been employing them for the last thirteen years. The author, however, cannot "define, with any degree of accuracy, the exact case that will be benefited by intra-tympanic injections further than, in a general way, to hope, from the symptoms presented, that good may result."

The book is eminently practical, and yet we cannot but regret that, in so small a compass, so much space, relatively speaking, is taken up with the citation of concrete clinical cases, no matter how much to the point, and we would have preferred to have learnt something more of the pathology of the diseases treated of. In some particulars, too, there are evidences of haste in the compilation, such as repetitions, and uncorrected typographical errors not a few. We hope, also, in the third edition of the book, to find a better arrangement of the matter, which would, we are convinced, tend to make it even still more acceptable to the general practitioner and to the student than it now is.

Elements of Pharmacy, Materia Medica, and Therapeutics. By William Whitla, M.D.; Physician to the Ulster Hospital for Sick Children, &c. London: Henry Renshaw. 1882. 8vo. Pp. 524.

This work, which has just issued from the press, is one of a series of text-books, well known as "Renshaw's Manuals," and enjoying a deserved popularity, not alone among medical students, but also among teachers and practitioners. Written by men of note in the different branches of medical science, these manuals are stamped with the impress of authority. They are, as a rule, concise in style and accurate in description; nor is the present work an exception.

It would, indeed, have been difficult to find an author better qualified for the task of compiling a manual such as this than is Dr. Whitla. Intimately and practically acquainted with the details of pharmacy, well read in the subject of materia medica, and experienced in therapeutics from his connexion with the Ulster Hospital for Sick Children and the Belfast Charitable Hospital, the author has succeeded in condensing within the limits of a handy volume the information which a student of medicine has usually to extract, with great labour and loss of time, from two or three of the larger manuals.

The scheme of the book is both novel and attractive. The author, in arranging the subject-matter, forsakes the beaten track, and separates Pharmacy from Materia Medica, both of these from Therapeutics and the administration of Medicines, and all four subjects again from the Chemistry of the Pharmacopœia. The contents of the book, therefore, fall into five sections or parts—namely, Pharmacy, Materia Medica, Therapeutics, the Administration of Medicines, and Chemical Reactions and Tests. In the section devoted to Therapeutics the pharmacology of each drug is given; and Dr. Whitla, in defining this word as "the science of the action of drugs on the healthy organism," quotes the following passage from Prof. Fraser's address at the International Medical Congress in London, viz.:—"To this word (Pharmacology) we no longer assign the old significance which it bore as a mere synonym of Materia Medica. It now implies the science of the action of remedies, and it accordingly deals with the modifications produced in healthy conditions by the operation of substances capable of producing modification."

In Part I. the "science and art" of Pharmacy are considered under two headings—extemporaneous pharmacy, or the compounding and dispensing of prescriptions; and official pharmacy, including a description of the processes mentioned in the British Pharmacopœia for the preparations of its various drugs and formulæ, and a tabular arrangement of the official preparations themselves, so that the student can have a bird's-eye view of their composition and doses. The first division of this portion of the work is apparently altogether original in design, and its practical value is enhanced by a series of woodcuts illustrating the various operations of compounding and dispensing remedies in accordance with the prescriptions of the physician. In what is for the most part a useful chapter on "General Hints to the Dispenser," we are at a loss to understand the object of this "hint"—"When the physician orders salts, like Pot. Iod., or roots, like Gentian, with directions for their solution or infusion by the patient himself, the dispenser should *destroy their identity by the pestle, before sending them out.*"

In the chapters on "Official Pharmacy," the arrangement of the subject-matter reminds one of Dr. Duffey's edition of the late Dr. Handsel Griffith's "Materia Medica and Pharmacy;" but on looking closely into the two books a wide difference is observed. Both abound in Tables, but in Griffith's very valuable work these

are not confined to the part of the volume devoted to Pharmacy—they are found also in large numbers in the section on Materia Medica. In Dr. Whitla's book, Tables are not often met with under "Materia Medica," and are almost limited to the chapter on "Pharmacopœial Preparations." The great advantages of the tabular arrangement may be inferred from the following example:—

"**Vapores** (Inhalations—5 in number) are preparations in which the vapour of some medicinal substance is taken into the air passages alone, or mixed with the vapour of water.

VAPOR	INGREDIENTS
Acidi Hydrocyanici	10 to 15 minims diluted hydrocyanic acid in 1 dr. cold water, and the vapour to be inhaled.
Chlori	2 oz. chlorinated lime, cold water, q.s., do.
Coniæ	60 grs. extract of hemlock, 1 dr. solution of potash, 10 drs. water, the vapour of water is made to pass through 20 mins. of this.
Creasoti	12 minims creasote and 8 oz. boiling water to be inhaled.
Iodi	1 dr. tincture of iodine, 1 oz. water, and apply heat before inhaling."

At the end of the section on Pharmacy ten pages of blank paper intended for memoranda are bound into the book.

Part II., on "Materia Medica," includes all the drugs of the Pharmacopœia arranged in alphabetical order from "Acacia" to "Zingiber." This arrangement is, in our opinion, preferable to the plan of dividing the articles of the Materia Medica into inorganic and organic substances, and of arranging those of the latter class which are derived from the vegetable kingdom under the different natural orders of plants. To avoid a lengthened description, we will quote one entry—the first in this division of Dr. Whitla's book:—

"**ACACIÆ GUMMI** (Gum Acacia)—Leguminosæ.

"Gum Arabic; an exudation from the stem of the acacia, in spheroidal, colourless tears.

"Demulcent. Used chiefly to suspend insoluble powders in mixtures.

"Gum acacia enters into chalk and guaiacum mixtures, compound almond, and tragacanth powders, all the lozenges, and the following:—

"**Mucilago Acaciæ.** 4 and 6.

"An almost colourless, translucent, viscid liquid; prepared by dissolving 4 oz. gum acacia in 6 oz. cold distilled water.

"Used in the preparation of all the lozenges in the Pharmacopœia, except opium—in which the powdered gum only is used.

"Dose—1 to 4 drs.

"Mucilage should not be ordered with tinctures or spirits unless freely diluted with water; and in making a mixture of such ingredients the mucilage should be gradually added to the diluted spirituous liquid."

Appended to the section on Materia Medica is a short list of the principal non-official remedies, which are now in common use although not yet included in the Pharmacopœia. It is a pity that this useful list has been printed in dazzling red ink—surely, if the headings alone had been so printed, it would have sufficed to identify or to call attention to this feature in the work.

Passing to Part III. on "Therapeutics," we find the pharmacopœial remedies again arranged in alphabetical order, and under each heading a very full and often an original account of the supposed therapeutic action of the drug.

In illustration of the originality of this portion of the work we will quote Dr. Whitla's account of the therapeutics of gum acacia. He says:—

"**Acaciæ Gummi** is chiefly used on account of its physical qualities for making emulsions, suspending insoluble powders in mixtures, making pill masses, &c.

"Externally it has been used as a soothing application to burns and excoriations, and internally it is administered in inflamed conditions of the throat, gullet, and stomach, and as a basis for cough mixtures. It is generally supposed to act *mechanically* by covering over the affected surface, and preventing the contact of foreign matters or irritating secretions.

"In mild cases of chronic bronchitis, or in the not uncommon class of cases where there is hyper-secretion of mucus from the larynx, trachea, and larger bronchi, oftentimes associated with winter cough, it will be found of the greatest service; and since it seems to act after a fashion common to several other substances, a passing notice will be here made of it for convenience, though its importance as a remedy hardly warrants a lengthened mention. If a piece of gum acacia as large as a small bean be placed in the mouth of a patient who is troubled with a scanty viscid mucous secretion continually coming off any part of the respiratory tract, and with difficulty expectorated, in about a minute or so the secretion will be found to have travelled silently up to the back of the pharynx or top of the larynx, from which it is dislodged by the slightest cough or regurgitant movement; and as long as the gum is sucked it will continue to be discharged with ease, until, as may be occasionally seen in some cases, the mucus becomes clear, though still pretty tenacious. Chloride of ammonium, gelatine, various potash and soda salts, act in a similar way.

"In chronic bronchitis with very profuse discharge, or in pulmonary cavities, these remedies have little effect, but in ordinary catarrh, after the acute stage, they will be found very useful if persisted in, and they run no risk of upsetting the digestion. It becomes a difficult question as to the way in which these substances act. One thing, however, is certain, that it is not by absorption, since the same effect, though in a *much less* degree, may sometimes be produced by sucking substances absolutely insoluble, as bits of glass, rubber, &c., and some of the soluble remedies produce no effect when swallowed in mixtures even in large doses; so that one is forced to the conclusion that they act by reflex action. Two conditions appear necessary to produce a decided effect upon the secretion—viz., the substance should be *soluble* in the fluids of the mouth, and should produce an impression upon the nerves of taste different from that continually being caused by food. Sugar, for instance, will not affect the secretion, but if flavoured with an essential oil, it appears to possess some power.

"The impression produced upon the terminal filaments of the glosso-pharyngeal or the lingual branch of the fifth nerve is conveyed to the centre in the medulla, whence it probably is communicated by branches of the vagus, or through the sympathetic system to the mucous membrane, or bronchus, in which it may effect nutritive, secretory, or motor changes. To pursue the subject further and inquire into the nature of these changes would be, with our present knowledge, only to enter into the region of speculation. It is, however, a well-established fact that the impression made upon the nerves of sight by seeing tempting food, or upon the nerves of smell by inhaling its odour, will cause copious secretion of gastric juice in the stomach; and the action of an irritating emetic will stimulate all the glandular apparatus of the respiratory tract, and greatly increase the quantity of bronchial mucus, as well as cause its dislodgment by its mechanical effect.

"It is generally maintained that ciliary motion is quite independent of direct nervous control, and this is based chiefly upon its persistence after death, and its resistance to poisons, electricity, &c., but a careful study of the action of various drugs sucked in the mouth would lead one to suppose that they possibly acted in some way upon the cilia lining the respiratory tract, probably through the indirect action of the nervous system stimulating them to brisker and stronger movements, sweeping up secretions which, on account of their tough and adhesive properties, are with extreme difficulty and slowness carried along the membrane.

"It is, however, possible that such secretory changes take place in the mucous surface, through the action of the trophic nerves of the part, as might cause the secretion to become less viscid (though it does not appear so), or the membrane more moist, whereby the cilia would be permitted to move more easily and quickly, and hurry along the secre-

tion; in either case the result is the same. As the effects of this class of remedies are constant when used in suitable cases, the name of 'Ciliary Excitants' is proposed as a convenient term in referring to them, though it is open to the serious objection of implying a mode of action which is possibly, after all, only a conjecture.

"As will be explained in speaking of some expectorants, the probability of any remedy acting as an expectorant and increasing the quantity of bronchial secretion without influencing the cilia is very slight. The cilia are parts of the same cell, the office of which is to secrete the mucus, and it is hardly in keeping with our present knowledge to suppose that the functional activity of the cells would be increased without influencing their prolongations—the cilia—even though the process of secretion should end in the death of the cell."

The author often appends to his notice of a drug a formula or prescription for its administration. Many of these are useful; in two or three instances, however, the doses seem rather large for ordinary use. Thus, at page 276, a six-ounce mixture is ordered containing two drachms and a half (150 grains) of chloral hydrate and three drachms (180 grains) of bromide of potassium, and of this mixture an ounce is directed to be taken at bedtime and half an ounce every hour until sleep is induced. Now, 25 grains of chloral and 30 of bromide of potassium are a large dose, unless in exceptional circumstances, such as an attack of *delirium tremens*, and certainly a caution is required to prevent the administration of any such full dose as a hypnotic, in typhus fever for instance.

Again, he speaks (page 266) of camphor as a diffusible stimulant in "large doses" (30 grains), but surely such doses are seldom given. We do, indeed, know an instance in which a quantity of spirit of camphor equivalent to 43 grains of solid camphor was swallowed by mistake by a young lady in a bad ataxic typhoid fever, and with the happiest results; nevertheless her medical attendants were so anxious about the occurrence that they administered milk in large quantities and a full dose of Battley's solution of opium as an antidote. Dr. Whitla speaks of "10 grains added to each dose of expectorant mixture" as being "useful in the chronic bronchitis of the aged," and of "20-grain doses, repeated every six hours," as "benefiting dysmenorrhœa." At the same time we are free to admit that camphor is not only sadly neglected as an internal remedy at the present day, but when it is used, is not given in nearly large enough doses.

At the end of the section on Therapeutics, a short chapter

occurs on "Groups of Therapeutic Agents." It contains definitions of various terms such as "Acids," "Alteratives," "Errhines," and so on.

Part IV. deals with the "Administration of Medicines," and includes subsections on "Dosage or Posology," "Incompatibility," the "Combination of Medicines," the "Weights, Measures, and Symbols used in prescribing," and "Prescription Writing." Under this last heading we find ourselves suddenly translated to the regions of Latin grammar and syntax, and a number of autograph prescriptions are introduced, with a replica in unabbreviated Latin and a full English translation, in order to train the student in prescription reading.

Part V. on the "Pharmacopœial Reaction and Tests" brings the work to a conclusion. We observe that, very properly, Dr. Whitla, totally disregarding the old chemical formulæ, expresses the reactions exclusively in accordance with the new or modern notation.

A copious cross-index is appended, which, taken with the alphabetical arrangement adopted by the author throughout the book, cannot fail to render the work of reference as easy a task as possible.

The book is dedicated appropriately by a Belfast man to a Belfast man, Sir William MacCormac, M.D., F.R.C.S., Surgeon and Lecturer on Surgery at St. Thomas's Hospital, "whose name is familiar wherever British surgery is known."

It will be seen from the foregoing analytical notice, that Dr. Whitla's work is evidently written to meet the wants of a very wide circle of readers—practitioners, medical students, and students of pharmacy alike may find within its pages that information which is required in their several callings. Writing as physicians, we may perhaps be disposed to think that Dr. Whitla has devoted too much attention to the department of the apothecary or the pharmaceutical chemist. At the same time, we can honestly say that so instructive and well-designed a manual has not often fallen into our hands; the reviewing of it has been a pleasure not a burden, and the author possesses our heartiest good wishes for the success of his work.

A Dictionary of Chemistry and the Allied Branches of other Sciences. By HENRY WATTS, B.A., F.R.S. Third Supplement. Part II. London: Longmans, Green, & Co. 1881. Large octavo. Pp. 2174.

IT has often been alleged that the number of systematic and comprehensive scientific works produced in the English language is very small. It must be admitted that the allegation is well founded. Compared with Germany or France, but especially with the former country, the United Kingdom has produced very few large and exhaustive works in any of the departments of physical science. We are glad to be able to state that so far as chemistry is concerned this reproach is now no longer deserved. Mr. Watts' great "Dictionary of Chemistry," which has now attained to its eighth volume, is the largest and most comprehensive work of the kind to be found in any language. It undoubtedly exceeds in both quantity of matter and variety of materials the great treatise of chemistry compiled by the late Professor Leopold Gmelin. The third supplement of Mr. Watts' work has been issued in two parts, on account of the large amount of chemical lore which it contains. The second part is composed of a book of 2174 large folios, the type being small. These facts will give our readers some idea of the enormous amount of information contained in the volume. The information, too, is given in the most concise dictionary-like form—namely, with the utmost amount of condensation consistent with clearness of description.

Amongst the articles most likely to interest medical men are those on the behaviour of lead with water, the nature and properties of the recently-introduced drug jaborandi, milk, the formation of glycogen in the liver, fermentation, the action of oils on copper, ozone, proteids, gelatine, quinine and allied alkaloids, strychnine, urine, wine, gelsemium, &c. Under the heading "Veratrum" are described no fewer than six distinct alkaloids from veratrum viride, and even a larger number from veratrum album. The reactions of several of the more important alkaloids are given. For example, amongst the many new reactions of morphine we learn that ammonium sulphomolybdate gives with morphine a blue colour perceptible to the millionth degree of dilution.

We learn that the simplest way to determine the amount of morphine in opium is to exhaust the latter with water, to filter the solution, after concentration on the water bath, decolorise with

animal charcoal and filter again. Ammonia added throws down the morphine, which is collected on a filter, dried and weighed. Good opium treated in this way yields from 14 to 19 per cent. of impure morphine, equivalent to from 10 to 13½ per cent. of the pure alkaloid.

In this volume the names of alkaloids terminate in *ine*, such as, for example, strychnine, codeine, veratrine, &c., whilst the names of proteïd substances, such as albumin, lactin, casein, &c., end in *in*.

We have, of course, recorded in this volume numerous additions to the organic acids, which have extremely long names. Two examples will, however, suffice for an illustration—namely, the nitro-orthobromotoluene-parasulphonic acid and dibromodihydroxy-phenylnaphthyldiazinsulphonic acid.

In conclusion, we have to congratulate both Mr. Watts and the publishers on the way in which this volume has been produced—matter, paper, and type are all that could be desired.

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Washington: Government Printing Office. Volume I. 1880. 8vo. Pp. 888. Volume II. 1881. 8vo. Pp. 990.

This wonderful work was commenced so far back as the year 1873, but it was not until June 1, 1880, that the first volume was presented to General Joseph K. Barnes, Surgeon-General of the United States Army, by Brevet-Lieutenant-Colonel and Surgeon J. S. Billings, of the United States Army. Nor is this to be marvelled at, when we learn that this first volume includes 9,090 author-titles, representing 8,031 volumes and 6,398 pamphlets, together with 9,000 subject-titles of separate books and pamphlets, and 34,604 titles of articles in periodicals. Some idea of the gigantic nature of the undertaking may be gleaned from the fact that the first volume brings us only to the middle of the letter "B" in the index, while the second volume terminates in the middle of the letter "C."

With commendable punctuality Volume II. was presented on June 1, 1881, exactly one year after the presentation of Volume I. The second volume includes 12,459 author-titles, representing 4,934 volumes and 9,810 pamphlets. It also includes 11,550

subject-titles of separate books and pamphlets, and 37,310 titles of articles in periodicals.

As may be inferred from the foregoing statements, this catalogue includes both authors and subjects—the names being arranged in dictionary order in a single alphabet. Under the subject-headings are included the titles of original articles in the medical journals and transactions contained in the Library; for this reason the catalogue has received the name of "Index-Catalogue." To the first volume is prefixed a list of abbreviations of titles of periodicals, showing the journals and transactions which had been indexed up to the time of publication of that volume. The list of abbreviations is separately paged, and runs to 126 pages. It is supplemented by an additional list in Volume II., running to 12 pages. These lists are in themselves a curiosity of medical, indeed of general scientific, literature.

The way in which the two ponderous tomes of the "Index-Catalogue" already published have been brought out reflects the greatest credit on Dr. Billings and on the Government Printing Office at Washington. The work is above criticism, and we can only express an opinion that no public library in this country should be without a copy of it as a book of reference and a microcosm of information.

The Principles of Myodynamics. By J. S. WIGHT, M.D. New York: Bermingham & Co. 1881.

ANIMAL mechanics is an attractive, but, at the same time, a difficult, subject whereon to write a handbook, and the many attempts which have been made from time to time to popularise it have been doubtfully successful. The treatise by Prof. Meyer, of Zürich, is, and will long be, the classic work on the subject, as it is the production of one who is a distinguished anatomist as well as an accomplished mathematician, while, as far as it goes, the "Principles," by Professor Haughton, is an admirable exposition of the portion of the science with which it deals. Dr. Wight has added another work on the subject, which, while free from the glaring errors which mark another book on a kindred department, formerly noticed in this Journal, is not up to the standard which such a work should reach. It is evidently written for those who are utterly ignorant of the most elementary principles of mechanics, for it consists of a series of the most rudimentary propositions

in the subject, and these too often clothed in a terminology which renders them obscure. Indeed the impression left on our mind on closing the book is that to those who are ignorant of these elementary principles the book is well-nigh unintelligible, while to those who have acquired even a good schoolboy acquaintance with the mechanical powers, the composition and resolution of forces, and the equations of the lever, more than nine-tenths of it is quite superfluous. The main idea in the book is the resolution of the forces of individual muscles into their components, which are classified as retentive and displacing, and the pith of the whole might easily have been stated in three octavo pages.

The most interesting details in it are the observations on the resisting powers of cancelli, where a few facts are given which, however, add very little to the accurate and careful observations of Meyer, or to the too little known researches of Wolff (*Archiv. f. klin. Chirurgie*, t. XIV., p. 273). Anatomists will take exception to a good many statements in this work, such as that the sartorius is an out-rotator of the leg at the knee, and the vasti in-rotators of the femur, &c. If the author, or some other person interested in this subject, would translate and re-edit Meyer's "Statik und Mechanik des menschlischen Knochengerüstes," adding thereto the newer observations of that author, of Dr. Haughton, Jevons, and the others who have made original observations in this line, they would serve the interests of science far better than by producing such crude and uninteresting treatises as that under notice.

Zoological Atlas, with Practical Directions and Explanatory Text for the Use of Students. 480 Figures. By D. M'Alpine. Edinburgh: W. & A. K. Johnston. 1881.

These two atlases of diagrammatic figures—one of vertebrated, the other of invertebrate animals—are calculated to be exceedingly useful books, and, with a little improvement, will prove a great assistance to the student of natural history. The figures are diagrammatic, and many of them are rather stiff, some fanciful, and none having indications of size, especially the microscopic figures in the invertebrate atlas, but they will serve very well as helps to the student in his practical work. The figures of the vertebrates are very much better than those of the invertebrates, and are well suited to assist the students of zoology in their dis-

sections. The type specimens are very well selected, and while in a few cases they are rather imaginatively designed, and others are simple reproductions of very hackneyed figures—as, for instance, earthworm gregarine—yet, on the whole, they are calculated to be useful, and with a few improved figures better conceived and as clearly executed, they will help the beginner in morphology.

Mr. M'Alpine's atlases are also exceedingly moderate in price, considering the amount of work which they represent, and persons beginning the study of zoology will do well to provide themselves with them.

On Cancer, its Allies and other Tumours, with special reference to their Medical and Surgical Treatment. By F. ALBERT PURCELL, M.D., M.R.C.S.; Surgeon to the Cancer Hospital, Brompton; Fellow of the Medical Society of London, &c., &c. London: J. & A. Churchill. 1881. 8vo. Pp. 311.

WHEN a specialist writes of his speciality one expects that in some branch of his subject he will throw light, if not on all, on several points. In this expectation we have read Dr. Purcell's book, hoping to find ample information either on the clinical treatment of cancer or on its pathology, seeing that the author holds the office of Surgeon to the Cancer Hospital at Brompton. When we say that the book has a bright red cover, good paper and type, we have said all we can for it.

The text is most obscure and often disfigured with out-and-out bad grammar—*e.g.*, "Hæmatoid carcinoma or fungus hæmatoides are soft and rapidly growing tumours." "As to the nature of the disease, melanoid carcinoma or 'black cancer' are really instances." Again, "the disease infiltrates itself along the cord to the inguinal glands, to the pelvic and lumbar, œdema either of one or both legs."

Specimens of grammar such as these are frequent and not capable of excuse as examples of careless punctuation or printers' mistakes.

We must further take exception to the coining of such terms as "scirrhoid," "melanoid," as violations of well-known rules. We presume that a fancy for the sonorous termination has led the author into this error, for his list of contents shows a goodly row of "oids" indiscriminately mated with nouns and adjectives.

Among the subdivisions of the cancers we find a chapter

devoted to "myxomatoid carcinoma," and naturally look for a detailed description, as such a disease is unfamiliar to us. We find the chapter contains a description of ordinary myxoma and a fair representation of its structure. The details we look for as enabling us to recognise "myxomatoid carcinoma" are the following:—"Myxoma is very rarely malignant, and hence it is important to distinguish it from colloid degenerations of such formidable growths as sarcoma and carcinoma." Here the chapter ends, and the author gives no further information on the subject.

Although the work contains many notes on treatment that are good and fairly readable, its defects in the earlier chapters are such as to prevent any but the most determined reader from reaching even a moderate distance through its 311 pages. Indeed the subjects it treats of will be found quite as fully, and much more correctly, exposed in any of the standard text-books.

Convulsions due to Depression of Spinal Inhibitory Centres; with special reference to the Convulsions of Apomorphine, Atropine, Strychnine, and other Poisons. By Edward T. Reichert, M.D.

In this very interesting paper, which is reprinted from the *Philadelphia Medical Times* of last August, the author maintains the view that, in the case of convulsions arising from the administration of many poisons and under other circumstances, the morbid condition is not one of excitement or stimulation either of muscles, or nerves, or nerve-centres, but a depressed or paralysed condition of the supposed reflex inhibitory centres, so that, the resistive power of the spinal cord being lost, the slightest stimuli suffice to cause convulsive movements of greater or less violence.

Transactions of the College of Physicians of Philadelphia. Third Series. Vol. V. Pp. 294. Philadelphia. 1881.

This volume is noticeable chiefly on account of the memoirs of Fellows of the Philadelphia College who died within the past year. Amongst these we have regretfully to mention Dr. George B. Wood and Dr. James Aitken Meigs. The papers read before the College are few and meagre; they consist chiefly of health reports of the city, and observations on foot-binding in China.

ST. MARY'S HOSPITAL
RADFORD
LIBRARY
MANCHESTER.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE COLLEGE OF PHYSICIANS.

SESSION 1881-82.

GEORGE JOHNSTON, M.D., President.
ALEXANDER NIXON MONTGOMERY, M.K.Q.C.P., Honorary Secretary.

Wednesday, December 7, 1881.

J. W. MOORE, M.D., Vice-President, in the Chair.

"Alkapton" in Urine.

DR. GEORGE C. ARMSTRONG exhibited a specimen of the urine of a little girl apparently in perfect health, whose mother he had attended three years ago in the worst puerperal convulsions he ever saw. The mother remarked that the child's urine, although perfectly normal in appearance when first passed, on being allowed to cool assumed a deep colour, and stained the child's linen. He sent some of the urine to Professor Tichborne, who had made the following analysis:—

"The specific gravity of this urine at 60° Fahr. was 1·025. Albumen was absent. It was acid to test paper, and on standing gave a slight deposit, consisting of urate of ammonia and a little mucus. The urea was scanty, and not sufficient to account for the high gravity—it was 1·2 per cent., or 5·25 grains per fluid ounce. This urine presented a great peculiarity; it contained a substance which is only met with occasionally, and which has been termed alkapton. Bödeker met with a case, and Lionel Beale mentions a case in which Dr. Johnson found it in the urine of an infant. This body stains the linen, particularly when the urine becomes alkaline. It behaves like sugar, and reduces copper, and probably it may be viewed in a somewhat similar light pathologically. Estimated as a sugar it would give about 8 grains to the fluid ounce. The urine was examined for the bile reactions, but gave none."

Dr. Armstrong said he put some of the urine into small bottles, and, having hermetically sealed them, left one exposed to light and air, and put the other into a dark place. The latter specimen after six hours was not changed in any way.

The Vice-President said that although this urine, after a manner, "behaved like sugar," as Dr. Tichborne's analysis stated, yet the reaction was very different. Under the influence of liquor potassæ *without the aid of heat* it struck a dark brown colour. Urine containing grape sugar, according to his experience, did not change when liquor potassæ was added to it, except under the influence of heat. Again, with sulphate of copper the reaction of the urine was very incomplete—not at all so complete as that given by grape sugar. The results of the microscopical examination of the deposit of the urine were completely negative; the deposit he experimented with consisted of a little mucus, epithelium, and a few small oil globules, the presence of which may have been accidental.

Dr. Walter Smith said the Society were under an obligation to Dr. Armstrong for having brought before them this rare and interesting specimen of urine. Upon testing the samples with which Dr. Armstrong and Dr. J. W. Moore had kindly supplied him [experiments demonstrated before the Society], Dr. Smith pointed out that the results confirmed the statements originally made by Bödeker in reference to so-called "alkapton" in urine. These are—1. Strong alkalies darken the urine without the application of heat, and the coloration proceeds *from the surface of the liquid downwards—i.e.*, oxidation co-operates with the alkali. 2. Reduction, at least partially, of the copper test. 3. Non-fermentation with yeast. The term *alkapton* is, it is presumed, derived from *alkali*, *ἁπτω* (fasten, or bind), from its relation to alkalies; but the word conveys no real information, and was given at a time (1861) when the physiological chemistry of the urine was very imperfectly understood. From various considerations Dr. Smith thought it probable that the peculiar substance or substances in the urine exhibited belonged to the "aromatic series" of chemical compounds, the physiological relations of which group have been investigated with remarkable success during the past five years. Pending further investigation it would be premature to express a definite opinion on the subject in question.

Dr. Finny asked had Dr. Smith yet submitted the urine to the test that he had mentioned in connexion with diabetic urine? Was it dextro-gyrate or sinistro-gyrate under the polariscope?

Dr. Smith said he had not investigated that point, but would do so if he got a further supply of the urine. He had examined a specimen of the mother's urine, and had found it quite normal. It did not contain the peculiar substances which was present in the child's urine.

Dr. Walter Smith read a paper on *Idiopathic Pericarditis.* [It will be found at page 1.]

The Vice-President said the comparative rarity of idiopathic pericarditis lent additional interest to Dr. Smith's communication. It should be borne in mind that in one of the three cases there was apparently a hereditary tendency to pericarditis. The father of the patient had suffered from rheumatic inflammation of the pericardium.

Dr. Henry Kennedy said that in the course of thirty years he had seen some nine or ten cases of the kind, and he had a strong conviction that they generally occurred in strumous subjects. In some of the cases a *post mortem* examination disclosed tubercles deposited in the lymph. He could not say that he had ever seen a case of pericarditis that, in any sense of the term, could be called idiopathic, unless perhaps one. It was that of a woman between thirty and forty years of age who was admitted into the Whitworth Hospital for a very aggravated attack of dyspepsia. Having occasion to get up on a winter's night, she was seized with a rigor, and next morning she was in a state of most fearful distress with her breathing. Her pulse was "tumbling" in a most extraordinary degree. Her illness went rapidly from bad to worse, and she died in the beginning of the third day. On a *post mortem* examination solid lymph in great masses was found poured out into the pericardium. The late Mr. Adams, in an admirable paper written at a time when the knowledge of cardiac physical signs was not nearly as perfect as now, gave a case of what might be called scrofulous pericarditis. The first case given by Dr. Smith appeared to occur in a strumous patient. The profuse acid sweating in another of the cases raised a suspicion of a rheumatic origin. It did not follow that rheumatic pericarditis might not exist without the joints being affected. He had twice seen pericarditis precede the pain and swelling of the joints in a rheumatic attack. As a rule, when pericarditis occurred in a person of rheumatic diathesis, and in the course of rheumatic fever, the pains subsided materially, and all the anxiety of the patient was referred to the heart.

Dr. Patton said he had at present a patient who was suffering from an attack induced by a chill five or six weeks before. There was a congestive bronchitis of both lungs. The pulse was extremely weak, but there was no affection of any of the joints, nor did the urine contain albumen. There was *frottement* over the heart. The patient's breathing became very bad, his pulse being very weak and quick, and his respiration short, and he discovered that there was extensive pleuritic effusion on the left side. The *frottement* then disappeared. The fluid was never completely absorbed or removed. Both lower limbs swelled. A few days after the acute attack came on there were a good many bursts of perspiration, though the sweat had not the acid smell of rheumatic

perspiration. There were considerable deposits of lithates in the urine, which sometimes assumed a purple colour. The case was going on from bad to worse. The gentleman was sixty-five years of age. There had been no increased dulness over the pericardium at any time.

Dr. Finny thought it extremly probable that in Dr. Smith's second case the disease was of rheumatic origin, and affected primarily the interior pericardial surface (myo-pericarditis). He concurred with Dr. Kennedy as to the possibility of rheumatic fever expending its whole violence on the pericardium alone. Last winter a girl came into the City of Dublin Hospital affected with choreic symptoms, but the chief evidence of disease was connected with the heart; and in a short time pericarditis developed itself, and afterwards rheumatic affections of the joints, wrists, and elbows. He thought they should be careful, without some further explanation, in accepting the cases before them as examples of idiopathic pericarditis, because that term was exclusive of pre-existing disease. A person might have scrofulous disease, and the heart might be affected secondarily; and, adhering to this view, Dr. Smith's first case also should be excluded from the category of idiopathic, because there was a focus of tubercle in the apex of the right lung, and there was also a change in one of the ovaries.

Dr. Walter Smith (in reply) said the word "strumous" was very elastic, and he neither affirmed nor denied the existence of strumous pericarditis. He would venture to lay stress chiefly upon three things in connexion with cases of pericarditis—viz., first, the general symptoms of the patient; secondly, the fact that physical signs, as an exclusive means of diagnosis, were sometimes insufficient; and, thirdly, that there were varying degrees of implication of the muscular tissue of the heart. In other words, the clinical evidence pointed to a frequent co-existence of myocarditis with pericarditis; and the great danger of pericarditis lay in that direction and not in the serous inflammation itself.

The Society then adjourned.

SULPHIDE OF CARBON AND IODOFORM IN PHAGEDÆNIC ULCERATION.

Dr. J. Chéron, at the Hospital of Saint-Lazare, employs the following solution:—Sulphide of carbon, 30 parts; iodoform, 5 parts. Iodoform dissolves readily in carbon sulphide, and the rival odours are mutually weakened by association. The pain is less severe than when the sulphide of carbon alone is applied, and it ceases as soon as the liquid has evaporated. It is best applied with a glass brush. Dr. Chéron has seen cicatrisation speedily result in cases which had proved rebellious to all the usual treatments.—*Revue Médicale.* S. W.

PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

FORTY-FOURTH ANNUAL SESSION.

Saturday, November 26, 1881.

Dr. J. A. Byrne, President, in the Chair.

President's Address.

As President of this Society, the duty devolves upon me of inaugurating the commencement of this, the forty-fourth session, by an Address, and in doing so I must commence my observations by craving your kind indulgence for any deficiencies and shortcomings which may appear in it, and your pardon if disappointment should arise in your minds by a comparison of it with the opening Address of gentlemen who have preceded me in this high and distinguished post. Indeed, had I consulted my own feelings, I would rather that the honourable position which I fill here to-day were filled by some person more competent to discharge the duties of the office, but I felt it to be a matter of loyalty not to refuse the request made to me by a gentleman now no more—that I would allow myself to be proposed for this distinguished honour, which the members of this, the oldest Obstetric Society in existence, were anxious to confer upon me.

The Report of the condition of this Society, which has just been read, announces the sad intelligence that it has lost four members—Dr. Gainfort, Dr. Halton, Dr. Cryan, and Dr. M'Clintock. Dr. Robert Cryan died in the early period of the past session. He was for many years a member of it, and although neither a frequent visitor at its meetings, nor a contributor to its Transactions, yet I am well aware that he took a strong interest in everything which affected its welfare, and he was always sincerely desirous that students should be thoroughly conversant with the knowledge of the great subjects which this Society has been in an especial manner founded to advance—viz., midwifery, gynæcology, and diseases of children. And although he was a pure physician, and did not at any time practise in any of these branches, yet his studious mind was thoroughly conversant with most of the important advances which have been made in them, and in conversations with him upon professional education he always most strenuously argued and insisted that men should not be sent out to practise without a sound and practical acquaintance

with those special subjects, and he was mainly instrumental, I believe, in inducing the good Sisters of Charity of St. Vincent's Hospital to open wards for the treatment of diseases of females, over which I have had the honour of being appointed medical attendant This example has been since followed in another large institution, thus increasing the areas of their usefulness. He was a most distinguished lecturer on anatomy and physiology, and as a clinical teacher in pathology and medicine he displayed remarkable powers, and had that earnest manner of teaching which makes so much impression upon the mind of the student, whilst at the same time his kindness of heart and simplicity of manner, and thorough modesty in professional matters, made him much admired, and endeared him to all with whom he came in contact. As a colleague in hospital and in the School of Medicine of the Catholic University, I can only say that his loss was great and much to be deplored, for he was an able lecturer, a wise counsellor, and a most sincere friend; and to me, who had an acquaintance with him of more than twenty years, the news of his sudden and unexpected death, after only a few days' illness, gave an unutterable thrill of pain.

The second loss which we have to deplore is one which, for a long time indeed, will be felt by every member of this Society, of which he had been for a very lengthened period one of its brightest ornaments. I allude to the death of Dr. M'Clintock, which occurred on the 21st Oct., in a manner rather sudden and unexpected, as his numerous admirers and friends were sanguine, from the favourable change which had taken place in his disease, that if not permanently restored to health, yet at least he would have so far recovered that he would have been able to continue to practice his profession in a modified manner, and to give the aid of his experience to this Society, which held him in great esteem. He had filled every position of honour in it, being nearly always on the Committee of Management, and having also filled the offices of Vice-President and President; but Providence ordained otherwise, as a sudden and fatal change occurred in his disease, and, as I have stated, he expired on the 21st October, resigned, calm, and happy.

This is not the place, nor is this the opportunity, to write a memoir of our lately departed President and friend. It would, however, be scarcely compatible with the respect which we all entertained for him and with our admiration of his abilities if I in this Address, the first which has been given in this hall since his decease, did not say a few words of his early history. Dr. M'Clintock was born in Dundalk, and at a very early age became a pupil of Dr. Brunker; thence he went to Paris, where it has been stated to me that in that gayest of capitals he devoted himself so completely to study that he never enjoyed the pleasures of it like other students. From Paris he went to Edinburgh and Glasgow, where he graduated in medicine in 1844. He became a Licentiate of the Dublin

College of Surgeons in 1842, and subsequently a Fellow in 1844. In 1848 he, in conjunction with the late Dr. Hardy, published his work on "Midwifery," and this was followed in 1863 by his treatise on "Diseases of Women"—a book replete with information and learning—his first essay being a most useful and instructive addition to our knowledge of obstetrics, and worthy of that hospital which had afforded him, from its great opportunities, the means of gleaning statistics and facts of a highly interesting and important nature. His latest contribution to the store of obstetrical literature was his edition of Smellie's "Midwifery," published by the New Sydenham Society. For Smellie he had always entertained a great admiration, and there is not much doubt that it was in some measure due to his familiarity with his works that he was indebted for that terseness of style and that vividness of language which distinguished him not only as a writer but as a speaker. From every quarter he was presented with many honorary distinctions, and his name was enrolled on the list of most of the special gynæcological societies in other countries, and since the year 1881 two of the highest professional honours were conferred upon him—viz., on the death of the late Dr. A. Hudson he was appointed by her gracious Majesty to the vacancy on the General Medical Council of the United Kingdom, and he was also selected to fill the Presidential chair in the Gynæcological and Obstetrical Section of the great International Congress, 1881. What stronger proof can be assigned of the great estimation in which he was held by our distinguished *confrères* in London than their selection of him for this position, which could easily have been filled up by a selection amongst the eminent specialists of London? It may be regarded as a tribute of their admiration and gratitude for the many and constant efforts which he had made to improve our knowledge, as well as of the great personal esteem in which he was held by them. Of his conduct during that short term of office it were needless for me to speak. With all the multitudinous subjects brought before the sixth section he displayed an intimate acquaintance, with most of them practically, and with others theoretically; and the event proved that the council of management of this great medical gathering could not have selected one better qualified to fill the office. He was highly cultured, impressive, resolved in his manner, and was a model of courtesy.

Ah, how little did any of us then assembled on the day of his opening address in our section suspect that he, our President, would soon be gathered with those illustrious dead whose history he had compiled and brought before the notice of the many distinguished men there assembled in a most pleasing and instructive memoir; but, now that he is gone from amongst us, how prophetic of his own fate seem the appropriate lines of Southey, with which he terminated his discourse, and which I may be permitted to quote:—

"My thoughts are with the dead: with them
I live in long past years;
Their virtues love, their faults condemn,
Partake their hopes and fears;
And from their lessons seek and find
Instruction with an humble mind."

Alas, gentlemen, within a few weeks of the dissolution of that Congress to the success of which he had so largely contributed, he was no more, and the intelligence of his sudden and unexpected decease will be received with sorrow in every part of the world where his reputation had caused him to be known and admired, as well as here amongst ourselves, where his skill, his powers of debate, his profound knowledge, his retiring modesty, and his private and professional character, without one single blemish, caused him to be universally admired and respected. Yes, alas! he is gone from amongst us, and we shall miss

"The touch of that magic hand
And the sound of the voice that is gone."

But let us hope that the influence of his name and his reputation will survive, and that his life-long labours in the branches of the profession, which he cultivated so well and so ardently, will be an example to others to imitate and follow, and, if possible, to excel.

Now, gentlemen, may I be permitted to say a few words about the condition of our Obstetrical Society itself, and I will not occupy much of your time in doing so, as the Report which has just been read contains the pith and marrow of any observations which I might be induced to make. In this Report, which does not reveal a highly flourishing condition of it, when compared with other kindred associations, although it may be looked upon as the parent-cell of all of them, yet there are some matters for congratulation, and I am glad to be able to inform the members of the Society that our "Proceedings" will continue to be published as before, and that this year each member will be presented with a volume containing an account of the transactions for the past two years, under the presidency of my friend, Sir E. Sinclair. This, I think, is a matter of great importance, and I sincerely trust that it will be the means of inducing many who have heretofore refrained from joining its ranks to come forward and assist it by becoming members; for although our proceedings are published in the Journal and other periodicals, yet it has always appeared to me a matter of great moment that they should be published in a separate volume, in order that more easy access to them can be had for purposes of reference and instruction. We may fairly assume that this Society is regarded in this city and throughout the country and abroad as the embodiment and expression of obstetrical and gynæcological knowledge in this country. Now, this being the case, it is not to be wondered at if those who practise in those branches—and this

may be said indeed of all our country friends almost without exception, and of the mass of our city practitioners—look up to this Society as their guide, philosopher and friend. We therefore hope and trust that it will be largely reinforced and recruited by our brother country practitioners, and by all who are interested in the improvement and progress of this especial knowledge; and we may adduce as an incentive to those who have hitherto refrained from seeking to become members of this Society the great numbers who are enrolled in the ranks of the London Obstetrical Society, which has done so much, and is doing more and more each succeeding year to spread the knowledge of the associated subjects for which it has been formed, and which publishes each year a volume of Transactions which is a credit to it, and which will form a rich *répertoire* of obstetrical and gynæcological science.

Now, gentlemen, whilst speaking upon this subject we may briefly ask whether it is an advantage to have special societies such as ours, or whether it would be better to have one large medical association divided into sections for the advancement of knowledge in its different branches. Very cogent arguments have been adduced in support of both those ideas, but in my opinion the former plan is preferable for many reasons, but more particularly for this—the advancement in the different departments of medical and surgical and obstetrical sciences is so great, so rapid, and so continuous, that it would be impossible to keep pace with the improvements and new doctrines constantly brought before the profession, and thus many men would not take any or at least very little interest in the affairs of a very large comprehensive association. Thus the tendency of one man's mind is to pursue surgery, another medicine, another obstetrics, another ophthalmology, and so on. Now, were all those different departments brought under one management, I do not hesitate to express the opinion that the interests of each would suffer, and thus the great mass of facts and opinions which are being constantly brought forward in each, and which are adding day by day to the large store of experience in each, would in a great measure be lost, and moreover there would not be the same inducement to take an active part in a small sectional society as there would be in one society for one purpose. This project was mooted and indeed discussed in London some time since, and the result was that the scheme of amalgamation did not find favour, and I think that had it done so, and that had absorption of the Obstetrical Society taken place, we should not have seen such great results to have followed in our particular branch as have followed, nor should we have seen such great and illustrious names contributing to the literature of it and raising it to its present eminent position amongst the medical sciences.

Now, on looking back into the history of the origin of this Society of Dublin, and it is not a very old one, I think that we shall find that the very *raison d'être* of its formation proves the necessity of its establish-

ment. At that not very remote period Dublin was looked upon as the foremost school of midwifery perhaps in the world. We had the finest and the largest lying-in hospital in the world; we had a galaxy of obstetrical talent; we had a Kennedy, a Montgomery, a Beatty, a Churchill, and others of distinguished note, yet will it be said that those eminent men erred in uniting together and forming this association? Did they not by this means give an additional *éclat* to the Dublin school of medicine, and will the present generation pronounce a verdict against their wisdom and correctness of judgment? Did the colleges open their portals to receive them with open arms, and confer their honours or distinctions upon them? Did those learned bodies see the vast and increasing importance of these essential branches of medical education? Did the great physicians and surgeons of those days take any interest in the advancement of our sciences? Did they offer to form an obstetrical section then? No; it was left for those men to form our Society, to support it, and advance its reputation in the best way that could be done without aid, and it must be acknowledged that they did good work, and left to us a great and noble example. But what is the case now? We have seen the most distinguished positions that these great corporations could confer placed at the disposal of the eminent men who were instrumental in forming and keeping up this Society; and here may I recur to the fact that our late lamented friend, Dr. M'Clintock, had the high honour conferred upon him of being elected last year to the Presidency of the College of Surgeons, and there are other gentlemen here to-night who have been similarly honoured; and the same may be said of the sister College of Physicians, which at one period regarded obstetrics with great disfavour. Now, may I ask you, would this have happened if obstetrics and gynæcology had not made great and rapid strides during this period, and if a great impetus had not been given to their study by the formation of this Society.

Since the commencement of my Presidency an event of great importance has occurred, one which affects not only the interests of this Society, but also of medical education—I allude to the representation of obstetrical interests on the General Medical Council of Education and Registration of the United Kingdom. The Report has furnished to you the details of the action which your Council took upon the death of Dr. A. Hudson, in order to have a special representative appointed by her Majesty in his place, and also has told of the success of the joint applications of this and the London Society that at least there should be one representative of it on the Council. Her gracious Majesty, by the advice of the Lord President of the Council, Earl Spencer, hearkened to the prayer of our memorial, addressed and presented to his Excellency Earl Cowper, Lord Lieutenant of Ireland, and the result was that the late Dr. M'Clintock was selected to fill the vacancy; and I think that I express the opinion

not only of this Society, but also of the medical profession here and in England and Scotland, that this appointment was the means of giving great satisfaction, inasmuch as in the first place the condition of obstetrical and gynæcological education required it; and, secondly, no better selection could have been made, for reasons into which I need not enter here, than that of Dr. M'Clintock; and I trust that in the filling up of the hiatus caused by his greatly lamented death, the same cogent reason will have weight with the Lord President, Earl Spencer, and that he will continue the appointment in the same line as heretofore; for what do we find on analysing the list of the members of the Council? That out of the twenty-three names constituting the Council there is not a single one representing this great and important branch, nor ever has there been one, since the formation of that Council until the late Dr. M'Clintock was appointed. Corporationism and collegism, medicine, surgery, pharmaceutics, have all had representation, but this great section of medical science has been passed over, and no one on that Council—I say it with much respect for the eminent gentlemen constituting it—could be supposed to be familiar with its needs and requirements, nor with the great advances which it has made of late years—an advance unequalled in any other department of medicine and surgery.

I trust, therefore, that the attempts now being made by the advocates of the plan to induce those in power to discontinue this special representation, and to hand back this one seat upon the Council to other quarters, may not be successful, and that the extract from *The Medical Press*, published in yesterday's papers, will have no weight or force in guiding the action of those who advise her gracious Majesty, who has always manifested much interest in everything that concerns the health and well-being of her own sex, of which she is so bright an ornament.

It would be scarcely compatible with the position which I occupy here this evening were I not to make some allusion to the great event which has occurred during the autumn of this year—the meeting of the International Medical Congress in London. This, the seventh session of this great medical association, which comprised so many celebrated names, has just passed away, and must mark an era in medical science. I believe that it has been the largest gathering of medical men which has ever taken place, and when I say that 3,200 names were inscribed on the roll of names, it will give some idea of the vast numbers of medical *savants* from every part of the world who came to London to instruct, to learn, and to add to the pile of knowledge which has been accumulating since the earliest birth of medicine.

This great medical army, marshalled by its different generals during its brief but brilliant campaign, proceeded from victory to victory, overcame obstacle after obstacle, and achieved successes which could not have been achieved in any other way; for in the discussions which took

place in the different sections truth could not fail to be elicited and error to be exposed. To our fellow-countryman, Dr. (now Sir) W. MacCormac, much, if not the greater part, of its success is to be attributed, for it was by his talents and skill and energy that this great undertaking was inaugurated, commenced, carried out, and brought to a glorious termination. He as honorary secretary, and with the aid of his eminent *confrères* in London, was mainly instrumental in organising this vast army, and gained his laurels by his great skill and talents, for at the termination of the proceedings he was honoured by her gracious Majesty by being offered the distinction which he, indeed, can proudly wear—a distinction which met with the approval of the entire medical profession in foreign countries, in London, and here in Ireland.

This great Medical Congress, as you are aware, was formally inaugurated in the presence of his Royal Highness the Prince of Wales, acting on behalf of her Majesty, by a short but able address from that most accomplished physician, Sir W. Jenner, and afterwards by another from Sir James Paget, in which he explained the purport and objects of this great gathering. This address, so eloquent, so learned, has added to his great reputation, and justified the choice which had been made in selecting him as President. Addresses followed each other in rapid succession, and when I mention the names of the speakers—Virchow, Flower, Wilks, Sir W. Gull, Johnson, Erichsen, Owen, Simon, Fraser, Longmore, West, Wilson, Billings, Féréol for the late Prof. Maurice Raynaud, Huxley, Bowman, Klebs, Pasteur, Charcot, and last, but not least, our own M'Clintock—I think that all will agree with me that such a great medical banquet was never before this meeting afforded to the collected medical representative minds of the different nationalities. Now, it is not my intention in this Address to dwell upon any of the great and vital questions brought forward before the different Sections of which this vast collection was composed. This would be a Herculean task, and one not suited to the present occasion, and had I the will, I should not have the ability, for the questions discussed in some of the sections were of the most abstruse and complex nature, involving the most intimate acquaintance with the most advanced opinions and theories and discoveries of the present day, in physiological, pathological, and biological science; but I may be permitted to make a very few observations upon some of the subjects brought before section VI., of which the late Dr. M'Clintock was President, and upon the Council of which I, through the kindness of the organisers of the Congress, in conjunction with our distinguished ex-Presidents, Sir E. Sinclair, Dr. Atthill, and Dr. Kidd, had the high distinction to be placed.

The papers selected for this section by the Council to be read and discussed were numerous and important, and with your permission I shall give a brief *resumé*:—

1. Antisepsis in Midwifery. By Prof. Spiegelberg, of Breslau.
2. Puerperal Eclampsia. By Dr. Angus MacDonald.
3. Parallel between Embryotomy and the Cæsarean Section. By Dr. G. Eustache, Lille.
4. Common Nomenclature in Obstetrics. By Professor A. R. Simpson.
5. Surgical Treatment of Prolapse of the Uterus. By Dr. G. Eustache, Lille.
6. Oöphorectomy, Battey's Operation, Spaying, Castration of Women. By Dr. Robert Battey, of Rome, Georgia, U.S.
7. Oöphorectomy. By Dr. T. Savage, Birmingham.
8. The Exciting Cause of Attacks of Hysteria and Hystero-Epilepsy. By Dr. Graily Hewitt, London.
9. The Curability of Uterine Displacements. By Dr. Paul F. Mundé, New York.
10. The Influence of Uterine Disorders in the Production of Numerous Sympathetic Disturbances of the General Health and Affections of Special Organs. By Dr. Edis, London.
11. Mechanical Treatment of some of the Displacements and Diseases of the Uterus. By Prof. R. B. Cole, California.
12. Improvement in the Construction and Application of Uterine Repositors. By Dr. E. Verrier, Paris.
13. Total Extirpation of Uterus. By Dr. W. Freund, Strasburg.
14. The Local Treatment of Chronic Metritis. By Prof. Amann, Munich.
15. Intra-Uterine Medication, more especially by Mopping by means of the Graphidometre. By Dr. P. Ménière, d'Angers.
16. Reparative Surgery of the Genital Tract. By M. Pallen, New York.
17. Laceration of Cervix Uteri. By J. Henry Bennet, London.
18. Amputation of the Neck of the Uterus. By Dr. A. Le Bond.
19. New Hysterometer. By Dr. P. Ménière, d'Angers.
20. Improvements in Construction of the Forceps. By Prof. Tarnier, Paris.
21. Curves of the Midwifery Forceps. By Prof. Lazarewitch, Kharkoff, Russia.
22. Further Remarks on the Use of the Intermittent Contractions of the Pregnant Uterus as a means of Diagnosis. By Dr. Braxton Hicks, London.
23. Peculiar Disposition of Twin Ova. By Dr. Budin, Paris.
24. Clinical Features, Anatomy, and Uses of the Genu-Pectoral Position. By Dr. Hart, Edinburgh.
25. Treatment of Puerperal Hæmorrhage. By Dr. Barnes, London.
26. Do. do. By Dr. More Madden, Dublin.
27. Trismus and Tetanus of the Uterus in Labour. By Dr. Roper, London.
28. Passage of the Ovum from the Ovary into the Fallopian Tubes. By Prof. Kinkead, Galway.
29. Accouchements by Electricity. By Dr. Apostoli.

The papers brought forward in this section and discussed were of an extremely interesting nature, and did time permit me, I would like to say something about them. Suffice it to say that twenty-nine papers appear on the printed list; many of them were of great importance, and involved questions of great difficulty and perplexity. I may mention as instances Dr. Battey's (of Georgia) paper on Oöphorectomy, which was read in conjunction with Dr. Savage's (of Birmingham) paper on the same subject, and Dr. Freund's (of Strasburg) paper on Total Extirpation of the Uterus, as also the papers of Dr. A. Le Bond on Amputation of the Cervix Uteri, and of Dr. Montrose Pallen (of New York) on the Reparation of the Genital Tract by operation, of Professor Tarnier and Professor Lazarewitch on the Forceps, and many others. Now, to do justice to the great questions suggested by these operations, involving so much danger to life, and to the other subjects mentioned, would, as I have already said, occupy more time than could be spared in an Introductory Address of this kind. It is sufficient to say that these subjects were brought forward by men of the most advanced reputation in their specialities, that they fully bore out the high character which our Continental and Transatlantic brethren have gained as being amongst the foremost of gynæcologists and obstetricians—a reputation which they still sustain, and that they received at the hands of the most eminent men of these kingdoms that attention and consideration which they were entitled to receive from the boldness of the views expressed by these distinguished advocates; at the same time that no amount of fair and just criticism was spared in investigating the truth of the doctrines enunciated in their essays.

In conclusion, gentlemen, I have to thank you for the patience with which you have listened to this address, perhaps somewhat long and tedious, and to apologise for its incompleteness, and perhaps what may be deemed its want of importance.

The following resolution was proposed by Dr. Kidd, seconded by Dr. Denham, spoken to by Dr. Cole of San Francisco, and passed in solemn silence :—

"Resolved—That we desire to record our deep sense of the loss sustained by this Society and the profession at large in the death of Dr. Alfred H. M'Clintock, one of the most distinguished, energetic, and active of our members, whose many contributions to our 'Proceedings' and other writings have by their high scientific and literary merit added much to the reputation of the Obstetric School of Dublin.

"We beg also to express our deep and heartfelt sympathy with his family in their bereavement."

Dr. Beverley Cole of San Francisco exhibited a number of instruments.

The Society then adjourned.

ST MARY'S HOSPITAL
RADFORD
LIBRARY
MANCHESTER

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

President—William Stokes, M.D., F.R.C.S.I.
Secretary—E. H. Bennett, M.D.

Stenosis of the Mitral Orifice.—Dr. Nixon said: Although there is nothing very unusual in this specimen, yet it is such a perfect type of disease of its class that I thought it would be interesting to exhibit it. The specimens before the Society are the abdominal and thoracic viscera of a girl, twenty-five years of age, who was under the care of my colleague, the late Dr. Hayden, in the Mater Misericordiæ Hospital for some months. She had symptoms of extreme mitral narrowing, as shown by an unusually well-marked and prolonged presystolic murmur, together with the usual signs of obstructed pulmonary circulation. In the course of time she got general dropsy, general anasarca, and ascites. It became necessary, in order to relieve her embarrassed breathing, to remove, on several occasions, the fluid from the peritoneum. She finally succumbed to peritonitis and œdema of both lungs. The resident pupil, in making the *post mortem* examination, found, on opening the pericardium, a very considerable quantity of serous fluid in it. The heart presented a somewhat peculiar appearance. The left margin, instead of being a straight line, presented a distinct curve, whilst the walls of the left ventricle felt very hard, from which I infer that death occurred during the contraction of the ventricle. On opening the cavity of the ventricle, the chamber was found to be considerably diminished in size, and the walls hypertrophied. Examining the left auricle, we found its capacity enormously increased; its interior presents, in different places, signs of endocarditis and atheromatous change. On looking from the auricle into the ventricle, you perceive an exaggerated condition of stenosis of the mitral orifice. The stenosis is so marked that you can hardly get the handle of an ordinary scalpel through it. The cause of this contraction is apparently due to the anterior segment of the mitral valve, which is considerably thickened, being the seat of calcareous degeneration. The appearances, as shown in the specimen, present a very good example of what is known as the diaphragmatic condition of the valve. Passing to the right side of the heart, and opening the cavity of the right ventricle, we see that it is not considerably altered. The wall of the ventricle is very much thickened, but the muscular tissue, as far as I can judge from its firm feel, is quite unaltered in structure. This is a rather interesting point, for the condition of the ventricle is one of hypertrophy of the

walls, without any increase in the size of the chamber. This is not so with the right auricle, which has a greatly increased capacity—the difference between the cavities of the two chambers being very striking. I looked carefully into the interior of the auricular appendix to ascertain if there were any fibrinous concretions there, but—except at the extreme apex—there are none to be observed. Of course, in connexion with such a condition of the mitral orifice, it was important to ascertain whether there existed any spots of hæmorrhagic infarction of the lungs. I examined both, but found no traces of infarctions. There seems to be a considerable amount of sanguineous engorgement of the lungs. This appears to be uniform; but in no part of the lungs could I detect any nodules of infarction. There was not hæmoptysis at any time during the illness of the patient. The liver presents a very good example of the nutmeg appearance found in this organ in chronic heart disease. As is usual, in cases where there is obstructed venous circulation, the capsules of the different organs—namely, the spleen, liver, and kidneys—are thickened. The spleen is congested. You have also distinct evidence of general peritonitis. This is especially shown in the neighbourhood of the liver, in which there is a considerable amount of perihepatitis. Moreover, the coats of the intestines are matted together by recent lymph. As is usual, in cases in which paracentesis abdominis has been performed a number of times, peritonitis in this case developed in a perfectly latent manner, there having been no pain or tenderness on pressure during life, nor any evidence of peritoneal inflammation. The chief point of interest in the case is the illustration it affords of the diaphragmatic condition of the mitral valve. The entire disease seems to have been expended—why, it is difficult to say—on the anterior segment of the mitral valve. In connexion with the mitral stenosis, the condition of the left ventricle found is rather peculiar. The general condition in cases of mitral stenosis is that there is a diminution in the size of the cavity of the ventricle, and considerable attenuation of its walls. Here you have some diminution in the size of the cavity, with hypertrophy of the walls. The only explanation of this hypertrophied condition of the walls of the ventricle, accompanied by mitral stenosis, is that it must have arisen from prolonged venous congestion. As a result of the obstruction on the left side of the heart, you had engorgement of the right side, and general venous congestion, which leads to a considerable impediment to the capillary circulation—consequently, an increased amount of internal pressure in the left ventricle, and so it becomes hypertrophied. It is difficult to explain the great contrast in size which the right ventricle affords with the right auricle. I can only do so by saying that the disease occurred in a growing young girl, in whom the processes of nutrition were active. The consistence of the walls of the ventricle shows that the muscular fibre has undergone no degeneration. So that

what occurred here probably was that the ventricle reacted to the increased strain on it, and underwent hypertrophy. The hypertrophy was of such a degree that it prevented the dilatation of the ventricle, whereas the auricle acted as a reservoir for the ventricle, and thus obviated the dilatation of the latter chamber.

Dr. J. W. Moore.—Was there any hæmorrhagic infarction of the spleen or kidneys?

Dr. Nixon.—None.

Dr. Moore said they had had at the Meath Hospital an instructive case of mitral stenosis, which was admitted more than a year ago, and in which the presystolic murmur and the other signs of pulmonary obstruction were well marked. Two months ago the patient, who had been previously under the care of Dr. Foot, came under his care. The disease had then advanced to a further stage, and the patient was suffering from considerable pulmonary trouble. There was passive congestion of the base of the lungs, with incessant hacking cough and expectoration, which was from time to time streaked with blood. The patient rallied from that condition. The physical signs connected with the heart were as well marked as in the previous year. There was well-defined presystolic murmur at the apex of the heart, and at the left side the pulmonary second sound was exceedingly audible. He recovered, and three weeks ago was sent to the Convalescent Home. He remained there, gaining strength and health, until the previous evening, when he was suddenly attacked with severe pain in the left lumbar region. This was exceedingly like renal colic, the pain shooting down to the left testicle, and completely crippling him, causing nausea and even vomiting. There was also rapid diminution in the quantity of urine, which, taken with the pain, seemed to indicate embolic infarction, in all probability of the left kidney. There was no blood in the urine.

The Rev. Dr. Haughton said they could understand quite well the hypertrophy of the muscular fibre of the right auricle in Dr. Nixon's case; and he thought Dr. Nixon's explanation of the enlargement of the cavity of the auricle was quite complete. But he gathered from him that whatever enlargement there was in the left ventricle arose from the length of time that the disease existed, and the general obstruction of the whole venous circulation. It was a kind of secondary enlargement, which resulted from the patient having lived so long under such conditions. How long did the whole case last—was the stenosis of a year's standing?

Dr. Nixon.—She had rheumatic fever three years ago, and we dated the heart disease from that. There was no distinct evidence of the time she got the heart disease.

The Rev. Dr. Haughton.—The whole system would have been obstructed, and the left ventricle would have enlarged; but one would

have expected that the right ventricle would have enlarged more quickly than the left.

Dr. Finny said he did not think there was distinct enlargement of the wall of the left ventricle, although, no doubt, it was somewhat thicker than it should be. The heart was in a state of dilatation, but it did not look to him to be hypertrophied. The theory was put forward by the late Dr. Law that venous congestion, thrown back through all the capillaries, owing to obstruction of the lungs, produced hypertrophy of the left ventricle, without dilatation of the cavity. It was a theory which had not a consensus of opinion, and should be carefully considered. It was well known that congenital mitral stenosis often showed before puberty, and lasted for several years before death. Dr. Nixon had given no account of the duration of the disease, but probably it had been quite as long as in other cases.

Dr. Walter Smith said Dr. Nixon's explanation only applied to the minority of cases.

Dr. Nixon (in reply) said that although the question of the existence of hypertrophy of the left ventricle in his case seemed to be a matter of opinion, he thought the phenomenon well marked, especially towards the apex of the ventricle.—*November* 12, 1881.

Necrosis of Tibia, involving Knee and Ankle Joints.—The President said: This specimen was taken from a young lad, sixteen years of age, who came under my care in the Richmond Hospital last spring. He stated that about four months previous to that time he was in the enjoyment of excellent health. After a day's agricultural work he was seated before a fire resting himself, when he suddenly felt a violent pain about the centre of the left leg. This was followed soon after by a general tumefaction, and a great deal of pain and fever. He poulticed it for some time, and then sought relief at a neighbouring infirmary. The surgeon, under whose care he came there, made free incisions over the leg, and evacuated a large amount of matter. He remained under his care for some time, but the case made no improvement, and eventually the surgeon sent him to the Richmond Hospital under my care. When I saw him the condition of his leg was as follows:—There were numerous sinuses over the external aspect and front of the leg, and through these, wherever probes were introduced, the diseased bone was perfectly apparent. Through these openings a sanious watery discharge constantly oozed. There was also very distinct evidence of dislocation of both bones of the leg backwards and somewhat outwards. The disease was obviously so very advanced that it appeared to me that any attempt to save the limb was out of the question. Accordingly, I amputated the thigh, performing a modification of Carden's and the supra-condyloid operation. The case did very well after the amputation, the wound

healing without any pus, which was remarkable, considering the low condition that the patient was in. The disease was evidently acute necrosis. The points of interest are the complete immunity from disease of the fibula, and also the fact that the epiphyses, which, as a rule, enjoy immunity from this disease, were engaged—the upper as well as the lower. There was complete disorganisation of the soft structures of the knee, and ankylosis between the femur and the head of the tibia. Through numerous cloacæ are apparent several small sequestra, which can be both seen and felt. At the lower extremity of the tibia there is perfect ankylosis between the tibia and the astragalus, and the latter seems to have undergone a complete alteration of form—to have partaken, in fact, of the disease to a great extent. The chief points of interest in the case, therefore, are the great extent of the disease, its involving the epiphyses, and its coming on spontaneously without the slightest injury of any kind. It presents many points of resemblance to another remarkable specimen taken from a patient of mine, who was under my care in the Richmond Hospital four years ago, and for which, in consequence of the knee-joint being extensively involved, amputation had to be performed. I have also to exhibit another smaller, but not less interesting, specimen of necrosis. It was taken quite recently from a lad, aged nine years, who is at present under my care in the Richmond Hospital. He was admitted for a small enlargement over the external malleolus. There was a puffy swelling, with two small sinuses, through which a probe detected the softened bone. There was no pain or tenderness, or inability to walk, and he was otherwise apparently in excellent health. A month previously, while playing, he got a kick over the outer malleolus. I satisfied myself of the existence of bared bone, and expressed the opinion—which subsequently turned out to be erroneous—that the disease was localised at the malleolus, and that if the two sinuses were laid open, a gouge would probably be sufficient to remove all that existed of disease. I made an incision, but found, to my surprise, that considerably above, as well as below, the incisions denuded bone existed—a smooth ivory condition of bone, perfectly denuded of periosteum. I increased the incisions in order to come to the end of it; but after enlarging the incision upwards for six or seven inches, it became clear that the entire diaphysis of the bone was affected. I therefore excised it sub-periosteally—a small portion of the periosteum, which had undergone partial ossification, coming away along with the shaft of the bone. The case is of interest as showing that a large amount of disease may exist with little external evidence of it; and it also shows how desirable an early operation, where this form of necrosis is suspected, would probably be. Whether there will be reproduction of so large a portion of bone as I removed, I cannot say; probably there will, having regard to the age of the patient, and the great

care that we took to preserve the periosteum as much as possible. The wound has almost entirely healed, notwithstanding the pre-existing sinuses and discharge of pus, and has remained aseptic throughout, the antiseptic used being, not carbolic acid, but eucalyptus. The healing is complete, except at one point, and there is no trace of pus production.

Dr. E. Hamilton asked was there any history of syphilis?

The President.—There was not. The patient, in the first case, was a very young lad—only fourteen.

Dr. Bennett observed that the condition of the fibula showed that the patient had not suffered from constitutional disease. Where syphilitic caries affected the tibia, it also showed in the fibula.

Dr. Corley asked would an earlier operation have been advantageous?

The President.—It is not very easy to answer that question. I did not see the case until the disease had reached the degree of development that you can get a fair idea of from the specimen. Although the disease is the same in the two cases, the ætiology is different, for in one the origin of the disease was traumatic, while in the other we had no history of any injury.—*November* 12, 1881.

Fractures of the Metacarpal Bones.—Dr. E. H. Bennett exhibited a series of united fractures of the metacarpal bones, with the object of determining the character and site of the most frequent fracture of these bones. He said: Every systematic treatise on surgery and the special treatises on fractures all contain some account of these injuries, but in few are any exact details to be found. The author of the "First Lines," S. Cooper, asserts that "the carpal and metacarpal bones can be broken only by great direct violence, as by gunshot wounds, the action of machinery on the parts, or the passage of the wheel of a heavy carriage over them." Beyond these compound fractures of the bones of the hand he recognises none. Sir A. Cooper mentions, apart from the compound injuries indicated in the passage I have quoted from the "First Lines," the occurrence of fracture of the distal extremity of the metacarpal, "which is called the head," as a simple injury. Boyer, taking a wider view, discusses the question of the relative frequency of simple fractures of the metacarpals in the individual bones, and assigns the premier position to the fifth metacarpal, while he states that, arguing *à priori*, we should expect to find the first most commonly broken, only for its free movement. To correct this uncertainty we find Malgaigne first giving statistical information, which proves the first bone to be equal in its liability to simple fracture to all the others taken together. His numbers are, however, too small for any final conclusion.

The following passage by Mr. Hulke exposes the facts most clearly:—

"The statements that have hitherto been made as to the comparative liability of the different bones of the series to fracture are very unsatis-

factory, owing to the insufficient number of observations upon which they are founded. Of the 113 cases which I have collected from the records of the Middlesex Hospital, in 71 the particular bone is mentioned. Of these four are double fractures (two of the second and third, two of the third and fourth), and in one the third, fourth, and fifth bones were broken, making in all 78 fractures. The number to each bone is—

First,	27
Second,	16
Third,	9
Fourth,	12
Fifth,	14
	78

"Probably an undue prominence is here given to the first, as on account of its distinctive characters it is more likely than any of the others to be particularised in describing the nature of the accidents. Allowing for this probable source of error, we may still place it foremost in liability to fracture, as might be supposed from its position and extent of motion; the others seem to follow in order as their situation exposes them to injury, the third or middle bone being the last. The fracture is usually in the middle or distal third of the bone; it is transverse or oblique, often attended with very little displacement, in which case the mobility of the fragments and the crepitus are the chief signs of the injury" (Holmes' System).

In this passage the author makes no mention of any pathological facts, while it is evident that he has not had that personal acquaintance with the series of injuries he records which would enable him to write with confidence as to the seat of fracture. Museum records are most scanty in this matter, even the Musée Dupuytren contains but a single specimen. In this dearth of facts no apology is necessary for my submitting a series of those injuries which I have collected in the Museum of the School of Physic. All these have been procured from subjects dissected in the school, and, so collected, although few, are fairly representative of their class. They prove, I think, the truth of the observations of Malgaigne and of Hulke that the first metacarpal bone is more often fractured than its fellows; but, further, they go far to prove that the most common injury is a variety of fracture not as yet described by any writer, situated in the part of the bone most remote from the site assigned by the author I have quoted. The most common site of fracture is thus described by Humphrey:—"The metacarpal bones are thinnest and most liable to be broken just above the middle"—a position but little differing from that assigned by Hulke in the passage I have quoted.

The specimens I submit are united fractures of the third and fifth metacarpals of the same right hand, one of the shaft and one of the base

of the fifth, both from right hands, and five of the first, all from the right side.

These are the entire number of these fractures which I have collected, and most remarkable is the fact that they are all of the right side. They show, so far as their evidence is of value, that the bones most frequently the subject of fracture are the first and fifth metacarpals of the right side.

Of greater interest is the fact that in each of the five examples of fracture of the metacarpal bone of the thumb, allowing for shades of difference such as must always exist, the type and character of the fracture is the same—a form and type of fracture not hitherto described in these bones; and if this series be of any value as representing the ordinary injuries, the commonest fracture, certainly the most common of the thumb, possibly of all the bones taken together, is that the characters of which are seen in this specimen, in which least of all have the lines of fracture been marked by changes on the articular surface which corresponds to trapezium. The fracture passes obliquely (*a b* in woodcut) through the base of the bone, detaching the greater part of the articular facette with that piece of the bone supporting it, which projects into the palm. The amount of displacement in this and all the specimens is trivial, and from clinical observation of the injury it is evident that the fragment displaced is not the smaller, as one might infer from an examination of the isolated specimens of united fractures, but the larger—in fact, to the extent that the irregularity of the surface indicates that the metacarpal bone of the thumb undergoes subluxation backwards. In all these specimens the dorsal surface of the bone is free from any implication in the fracture, and this fact, combined with the small amount of displacement which occurs, renders the fracture one extremely liable to escape detection. The importance of a correct diagnosis of this injury is illustrated by a case which I have had for nearly two years under observation. A girl, aged twenty, was thrown from an outside car and fell to the ground, saving herself from graver injury by putting forward her arm; she struck the ball of the thumb against the ground, and at once suffered extreme pain in it. Next morning I saw her at Sir P. Dun's Hospital, when at first sight no injury was apparent beyond the swelling of a bruised and sprained thumb. In handling the ball of the thumb I felt osseous crepitus, and, having my attention so arrested, I was not long in establishing the diagnosis of this injury, for the dorsal surface of the metacarpal was entire; it projected backwards at the articulation with the carpus, and by reducing it into place crepitus could easily be elicited. So trivial an injury does this appear to be, and the specimens show so little deformity, except in some the signs of arthritis consequent on it, I might fairly be asked what importance attaches to the correct diagnosis. All will admit that a correct diagnosis even in trivial injuries is desirable, but in this case the diagnosis is essential to

ST. MARY'S HOSPITAL
RADFORD
LIBRARY
MANCHESTER

a correct prognosis, and here lies the importance of the injury. Seeing the value of the movements of the thumb, no injury of it is to be lightly regarded, and this fracture, though it unites readily by bone and with almost inappreciable deformity, renders the thumb for many months lame and useless. In the case I have reported, even now nearly two years after the accident occurring in a young and healthy subject, the hand fails to grasp or lift with certainty any body requiring a wide gape of the thumb—for instance, to lift a tumbler full of water from the table, and this in a case where every care was taken to keep the parts in place and at rest for a proper time.[a]—*November* 12, 1881.

REMOVAL OF THE UTERUS FOR CANCER.

THE November number of the *New York Medical Journal and Obstetrical Review* contains a "special article" by Dr. Andrew F. Currier, of New York, in which the various methods of removing the entire uterus for cancer, as practised by Freund, Schröder, Czerny, and others, are reviewed, as well as the general question of the advisability of removing the organ. He thinks the advantages of the vaginal method over that of Freund (by laparotomy) are enormous—there is but one section of the peritoneum, the intestines are unharmed, there is a better opportunity to discover diseased tissue, which is most likely to be situated in the vicinity of the cervix, and, most important of all, the patients often survive, which is rare by Freund's method. But most patients are not likely to be benefited by either of these serious operations; the most hopeful cases will be those in which the patients are warned of their danger in the early stages of the disease, and in such cases Schröder's supra-vaginal excision of the entire cervix is most likely to prove of service. This operation, while not so radical as removal of the entire organ, and hence not so efficient in cases involving the tissues above the internal os, is far less grave, and is besides more thorough than amputation of the cervix, as it has ordinarily been done in the past. In those rare cases, however, in which the body of the uterus alone is involved, there is no alternative to laparotomy, either by Freund's operation or by some modification of it. As to drainage—a most important item in such cases—a perfect system seems impossible, but Bardenheuer's, although in the hands of others it has not fulfilled its author's expectations, affords as good results as any yet devised. As to the broad question of whether cancer of the uterus, and so cancer in general, can be radically cured, the author thinks the logic of events points to its approaching solution.

[a] Since presenting these specimens and the records of this case to the Society, I have had the opportunity of verifying the same details in another instance—cause, fracture, and result, all similar.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, M.D., F.K.Q.C.P.

Vital Statistics

Of the Eight Largest Towns in Ireland, for Four Weeks ending Saturday, December 3, 1881.

Towns	Population in 1881 (Unrevised)	Births Registered	Deaths Registered			Deaths from Zymotic Diseases							Deaths from Phthisis	Annual Rate of Mortality per 1,000 Inhabitants
			Total Number	Under 1 year	At 60 years and upwards	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhœa		
Dublin, -	348,525	730	644	143	151	–	17	10	1	2	15	8	65	24·0
Belfast, -	207,671	432	339	68	52	3	1	8	5	3	6	14	49	21·2
Cork, -	78,361	146	115	19	36	–	2	2	–	4	9	8	15	19·1
Limerick, -	38,600	72	71	14	15	–	–	4	–	1	1	2	6	23·9
Derry, -	28,947	74	72	10	15	–	–	7	1	–	3	2	4	32·3
Waterford,	22,401	39	32	5	10	2	–	–	–	–	1	–	3	18·6
Newry, -	14,782	31	51	7	4	–	–	27	–	–	–	1	4	44·9
Galway, -	14,621	32	21	6	9	–	–	–	-	–	–	1	2	18·7

Remarks.

The rate of mortality was excessively high in Newry, very high in Derry, rather high in Dublin and Limerick, moderate or low in the other towns. In twenty large English towns it was 21·3 per 1,000 of the population annually; in the sixteen principal town districts in Ireland it was 22·9 per 1,000; in London 20·9, in Edinburgh 19·9, and in Glasgow 21·6. Omitting the deaths (20) of persons admitted into public institutions from localities outside the registration district, the death-rate in the Dublin registration district was 23·3 per 1,000, and within the municipal boundary of Dublin it was 26·4 per 1,000. Eighty deaths were referred to zymotic diseases in the Dublin registration district. This number was but slightly more than half the average (144·0) of the corresponding four weeks in the previous ten years. Measles showed a greatly increased fatality—namely, 17 deaths, compared with 9 in the preceding period. Fever was not quite so prevalent or fatal. Of the 15 deaths ascribed to it, 9 were returned as being due

to typhus, 4 to typhoid, and 2 to "simple continued fever"—that is, to continued fever of undetermined type. Scarlet fever was widely diffused through the towns, and in Newry raged as a destructive epidemic, causing not fewer than 27 deaths out of a total of 51 deaths from all causes—that is, nearly 53 per cent. of the general mortality.

Although the weather in November was almost continuously warm, the cold weather which had previously prevailed in October exerted an unfavourable influence on the prevalence and fatality of diseases of the respiratory organs. The deaths from this class of diseases numbered 172, compared with a ten-years' average of 145·8, and included 130 from bronchitis (average = 106·4) and 30 from pneumonia (average = 23·2).

In Belfast phthisis was very fatal, causing 49 out of 339 deaths—that is, 14·5 per cent. of the total mortality.

Under the benign influence of mild weather the mortality from respiratory affections declined in London, the weekly number of deaths being 433, 345, 382, and 336 respectively—a total of 1,496 deaths, compared with 1,349 in the previous four weeks.

On Saturday, December 3, the cases of the most important epidemic diseases under treatment in the principal Dublin hospitals were as follow—smallpox, 0; measles, 35; scarlet fever, 30; typhus, 27; typhoid, 17; pneumonia, 11. Measles thus shows a very large increase, while scarlet fever and typhus have diminished in numbers.

Meteorology.

Abstract of Observations made at Dublin, Lat. 53° 20′ *N., Long.* 6° 15′ *W. for the Month of November*, 1881.

Mean Height of Barometer,	29·712 inches.
Maximal Height of Barometer (at 9 p.m. of 13th),	30·247 ,,
Minimal Height of Barometer (at 9 a.m. of 27th),	28·377 ,,
Mean Dry-bulb Temperature,	50·0°.
Mean Wet-bulb Temperature,	47·4°.
Mean Dew-point Temperature,	44·6°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·295 inch.
Mean Humidity,	82·4 per cent.
Highest Temperature in Shade (on 14th),	62·3°.
Lowest Temperature in Shade (on 26th),	35·3°.
Lowest Temperature on Grass (Radiation) (on 26th),	29·2°.
Mean Amount of Cloud,	56·4 per cent.
Rainfall (on 18 days),	2·173 inches.
Greatest Daily Rainfall (on 27th),	·614 inch.
General Directions of Wind,	S.S.W., S.W., & W.S.W.

Remarks.

The weather was throughout singularly open, stormy, and unsettled; the air was unusually free from fog; the wind blew continuously from points between S.S.E. and W., and in the latter half of the month reached the force of a violent gale from time to time. During the first few days the barometer was high over the Baltic and Scandinavia, but relatively low over Ireland, where the weather was mild. After the 4th the centre of highest pressure became established over France, so that S.W. winds prevailed in the British Islands, where remarkably mild, even warm, weather was experienced. At first the south-westerly winds were of moderate strength, but on and after the 12th they became gusty or squally—at this time also the weather, which had previously been fine and chiefly dry, changed generally to rain or showers. The evening of Sunday, the 13th, was strangely warm—at 9 p.m. the temperature was 61·1°, and during the night the thermometer did not fall below 57·5°. After the 20th the weather was very unsettled, stormy and rainy, the wind constantly shifting between S. and W., and temperature changing suddenly and considerably. These conditions were brought about by the passage north-eastwards of numerous areas of low atmospherical pressure along the western coasts of Europe. At 8 a.m. of the 22nd the barometer was down to 28·32 inches in the Shetlands, while it read 30·37 inches at Toulon. In Dublin a strong gale with lightning and a high temperature (58·5°) had prevailed the previous night, but in the W. and N.W. of Ireland a storm of almost hurricane violence was felt, which was accompanied with thunder, lightning, and hail. On the 26th and 27th the deepest depression of the month passed north-eastwards along the N.W. coasts of Ireland and Scotland. At 8 a.m. of the 27th the barometer was as low as 27·91 inches at Stornoway in the Hebrides, while it was 30·11 inches at Toulon—a difference in pressure of no less than 2·20 inches of mercury. In Dublin the barometer remained stationary at 28·38 inches for some hours. It had not been so low since November 11, 1877, when it read 27·86 inches in the Shetlands and 28·30 inches in Dublin. The wind rose to a very heavy gale except near the area of lowest pressure, when only light winds prevailed. Two days of fair weather followed, but the 30th was again rough and unsettled. In Dublin the mean temperature was 6·5° above that of November in the previous 15 years, and 2·3° above that of October, 1881. Lightning was seen on the 16th, 21st, 22nd, 25th, and 27th. Thunder was heard on the 23rd, on which day also hail fell. There was a solar halo on the 25th. Lunar halos were visible on the 3rd, 4th, 6th, 8th, and 29th. The air was foggy on the morning of the 7th.

PERISCOPE.

Edited by G. F. Duffey, M.D., F.K.Q.C.P.

THE MISTLETOE IN MEDICINE.

Dr. Payne has made a number of experiments with extract of mistletoe on both frogs and warm-blooded animals. The energy and rate of the heart-beats were increased, reflex action was weakened, and motor and sensitive nerves were paralysed. The pupils became dilated. It has long been employed as a popular remedy in cases of epilepsy, chorea, and neuralgia, but with indifferent success. As an abortive Dr. Payne believes it to be much superior to ergot; its action is more prompt and more sure, and instead of determining tonic contractions, like ergot, it produces intermittent contractions, analogous to those of physiological labour. In uterine inertia the extract, in doses of half a drachm to a drachm, has proved efficacious.—*North Carolina Med. Jour. and Revue Médicale.* S. W.

CARBOLIC ACID POISONING.

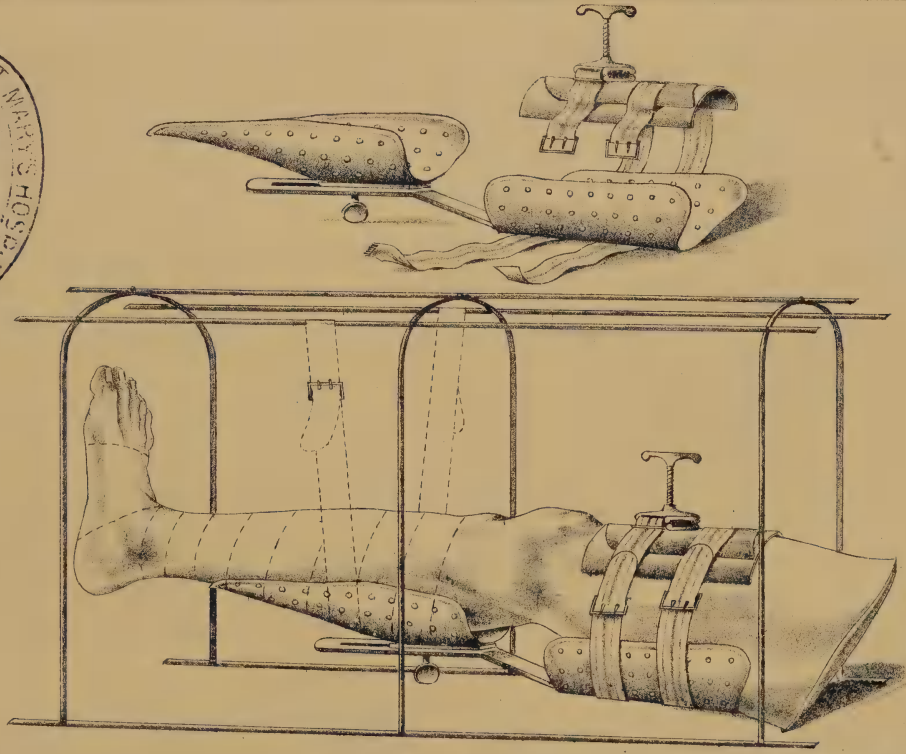
Dr. Edward T. Reichert, as the first of a series of contributions to the study of the toxicology of cardiac depressants, in the *American Journal of the Medical Sciences* for October, 1881, considers the physiological effects of carbolic acid, and gives a summary of fifty-six cases of poisoning compiled from various sources. The analysis of this set of cases is of considerable interest, and establishes several points of importance. Besides the local symptoms of pain in the mouth, œsophagus, and stomach, and frothing at the mouth or nose, there are, in cases of acute poisoning by carbolic acid, insensibility, difficult or impossible deglutition, a cold and clammy skin, stertorous respiration, a frequent, small, and intermittent pulse, contracted pupils, anæsthesia, and a brownish, blackish, or greenish urine, as the most constant and characteristic symptoms. The nervous system is profoundly affected; convulsions appear almost constantly in the lower animals, less often in man; when they occur they are clonic rather than tonic, and are centric in their origin—probably spinal, and confined to the motor columns. Upon the circulation the effects have not, heretofore, been thoroughly studied. "In man the heart generally presents strong evidence of the result of a decided and direct poison," for "the frequent feeble and intermittent pulse, so frequently noticed in man, is strong evidence of a decided depressant action upon the heart; as is also the slow and feeble pulse, which at times has been noted." The local action upon the alimentary

canal is that of a corrosive irritant poison, and causes a white eschar, the skin and mucous membrane becoming carnified. The smallest dose which proved fatal was one drachm in a man of sixty-four years, yet two children who had each taken the same quantity recovered. Death sometimes occurs apparently from shock when a large dose has been taken, usually it results from cardiac paralysis or asphyxia. In the treatment, demulcents, oil, milk, and eggs, with the administration of alkalies, especially saccharated lime, or the alkaline sulphates, constitute the most reliable agents to be used. The hypodermic injection of apomorphia may be resorted to in order to empty the stomach. [Löbker (*Dtsch. med. Woch.* referred to in *N. Y. Med. Jour. and Obst. Rev.* for Sept.) describes a case of poisoning by carbolic acid in a child, successfully treated by the introduction of a long flexible tube into the stomach, the contents of which were washed out on the syphon principle, until the water issuing from the stomach no longer smelled of carbolic acid.—Ed., Periscope.]

SALICYLATE OF SODA IN ERYSIPELAS.

M. Hallopeau (*L'Union Méd.*, May 1) has employed and recommends the following method in the treatment of erysipelas with salicylate of sodium:—1. Application to the part of compresses wet with a solution of salicylate of sodium (1–20), covered with oiled silk, and frequently renewed. 2. Internal administration daily of four grammes (ʒ j) of the salicylate, in three doses, in weak grog. M. Bochefontaine's experiments have shown that, if to a joint be applied compresses wet in a solution of salicylate of sodium (1–20) and covered with oiled silk, the drug will soon appear in the urine. The results of this treatment, observed in twelve cases, were as follow:—1. The temperature was undoubtedly lowered in those cases which presented marked febrile disturbance. 2. In most cases the duration of the disease was much abridged, judging from the statement of Velpeau, that twelve days is the usual course. In several cases the disease seemed quite promptly controlled. 3. Up to the present time the author has not observed the accidents which have occurred within his knowledge in typhoid-fever patients taking the same doses of the remedy. In one case there was a slight temporary delirium, which may not, however, have been due to the medicine. The author recommends suspension of salicylic acid treatment in this and other diseases as soon as cerebral disturbance or dyspnœa makes its appearance.—*N. Y. Med. Jour. and Obstet. Rev.*, Sept., 1881.

ST. MARY'S HOSPITAL
RADFORD
LIBRARY
MANCHESTER



Mr. HAYES.
on excision of the Knee-joint

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

FEBRUARY 1, 1882.

PART I.

ORIGINAL COMMUNICATIONS.

ART. IV.—*Excision of the Knee.* By P. J. HAYES, F.R.C.S.E.; Surgeon to the Mater Misericordiæ Hospital; Lecturer on Surgery in the Catholic University School of Medicine, &c.

NEARLY ten years have elapsed since I introduced the practice of excising the knee-joint for chronic articular disease, of progressive character, at the Mater Misericordiæ Hospital.

Previous to the period of my connexion with the hospital, excision of the knee had been performed in one instance, but the result was so unfortunate that every member of the surgical staff became in a measure prejudiced against the operation. My success induced my *confrères* to adopt the operation, and I can unhesitatingly state that our practice throughout has been eminently satisfactory.

Calculating all the cases of excision which I have had under observation, my experience extends to more than forty patients, but in the following table—chiefly copied from the hospital register written by my colleague, Mr. Coppinger—I enumerate cases which have been treated solely by myself and put up in the apparatus which experience of other methods caused me to devise. From this table of fourteen cases it will be seen that eleven patients recovered with excellent limbs. In three cases—where I was induced to operate against my own desire and opinion—secondary amputation was required; of these, one recovered, one soon died of phthisis, and one died within a week after the performance of the second operation.

TABLE.

Name	Sex and Age	Date of Operation	Disease	Origin	Result	Observations
K. H.	F., aged 17	Jan., 1875	Pulpy synovitis and osteitis	Injury	Successful	Wound united by adhesion, and patient was able to be carried, dressed, to sofa a fortnight after the operation. Limb perfectly straight, strong, and but little shortened.
M. C.	F., aged 17	Jan., 1875	Articular osteitis and erosion of cartilages	Injury	Successful	Five years later this patient called at hospital to show limb, which was quite straight and strong. Lameness hardly to be detected.
J. L.	M., aged 40	Jan., 1876	Articular osteitis	Injury	Successful	This patient came from Leeds to be operated upon, as the surgeons consulted by him had recommended amputation. The wound healed rapidly, and the man was soon able to resume work in the iron foundry where he had been employed. Limb straight, strong, and but slight lameness.
M. T.	F., aged 20	Jan. 17, 1877	Articular osteitis	Injury	Successful	Wound healed with great rapidity. Patient allowed to use crutches March 5th. Limb straight and strong. Lameness hardly to be observed.
M. R.	F., aged 12	Feb. 28, 1877	Pulpy synovitis	Obscure	Successful	On March 5th patient seemed very well, and was able to sit up in bed, but later she was attacked with erysipelas, and a large abscess formed in the calf of the leg. This having been drained, the patient recovered, but for some months she did not care to walk or run without the aid of a stick.
J. S.	M., aged 20	June 10, 1878	Suppuration and caries	Probably constitutional defect	Unsuccessful	Amputation performed one month after excision, owing to want of repair and signs of phthisis having been diagnosed. This patient died of phthisis some months after his return to the country.
M. H.	F., aged 24	Nov. 20, 1879	Articular osteitis	Could not be traced to injury	Unsuccessful	Patient was attacked with diarrhœa. Wound exhaled a fœtid sanious matter, and as a last resource amputation was performed December 11th, but without benefit, as melæna became profuse and treatment to arrest it proved ineffective. Patient died six days after amputation.

J. F.	M., aged 25	April 29, 1880	Articular osteitis -	Injury - -	Successful -	This patient returned to hospital April, 1881, as he had been severely kicked over the site of operation by a drunken man. The limb, however, appeared none the worse of this usage, and the patient could walk and run with the greatest ease. Extremely slight lameness only to be detected.
P. R.	M., aged 22	March 14, 1881	Arthritis with erosion of cartilages and caries	Injury - -	Successful -	Patient recovered rapidly, and is now able to work as a labourer.
M. K.	F., aged 17	May 19, 1881	Articular caries with sinuses	Doubtful - -	Successful -	Patient left hospital with a perfectly straight, strong limb. She was able to walk without the aid of a stick at an unusually early period after operation.
K. B.	F., aged 6½	July, 1881	Articular caries, large abscess extending in front of femur	Doubtful - -	Unsuccessful	Amputation had to be performed three weeks after excision, as the child could not be kept quiet, and in spite of the greatest care she would displace the bones. She seemed to suffer no pain whatever; but as it was clearly impossible to maintain the bones in apposition, amputation was performed, and the patient rapidly recovered.
J. C.	M., aged 22	June 9, 1881	Osteitis, sinuses, and pulpy synovial membrane	Could not be traced to injury	Successful -	Patient able to walk freely and without assistance. Writes that if hunting was resumed he could run across country with the activity of a boy.
W. M'H.	M., aged 8	Sept. 8, 1881	Pulpy synovial membrane, large cavity with three sequestra in tibia	Injury - -	Successful -	This patient was seen by Mr. Croly at the time of operation, and that gentleman, in unison with other surgeons, feared an unfortunate result, owing to the extensive destruction which necrosis and suppuration had effected in the head of the tibia. The boy recovered without a bad symptom, and eight weeks after the operation I removed the splint from his limb. By that time he could kick his leg about with the utmost freedom, strong bony union having taken place between the femur and tibia.
Mrs. D.	F., aged 22	Oct. 19, 1881	Chronic arthritis, pulpy synovial membrane, abscess in head of tibia communicating with joint, erosion of cartilage, &c.	Injury - -	Successful -	The recovery of this patient was remarkably rapid, and she undertook an eight hours' journey during the month of December.

From time to time I have read in our leading journals observations condemnatory of exsection of the knee, the fatality after operation being high, and even when life was preserved the limb remaining in an unsatisfactory condition. Again, I have observed suggestions emanating from surgeons who believe success can be almost insured by preserving the continuity of soft parts in front of the joint.

I can only say that in my large experience of knee excision the greatest measure of success seemed to be due to performance of the operation and retention of the limb according to the method which I have advocated as well as practised.

My former papers may have been either unnoticed or forgotten—hence to-day I venture to repeat, with certain modifications and additions, my description of the operation in the hope that other operators will be induced to pursue a method which is, in my opinion at least, the most likely to afford satisfaction and success.

The steps of the operation for exsection of the knee are too well known to render any lengthened account of the procedure needful. I usually flex the leg moderately, and, having defined the posterior margins of the femoral condyles, I cut from one of them to the other, straight across the ligamentum patellæ, and into the joint. At this stage the patella may be dissected from its attachments, but if fixed to the femur its separation will probably be postponed until after division of fibrous connexions between the femur and tibia. I prefer cutting through the lateral ligaments before proceeding to the division of either the normal or abnormal structures occupying an intra-articular position; also, when dealing with the latter, I keep the leg strongly flexed, and direct the cutting edge of the knife against the articular surface of the head of the tibia rather than towards the ligamentum posticum. I never attempt to clear the posterior aspect of either the femur or the tibia before applying the saw. I sever the bone from before backwards, and break through the posterior surface of each bone. This is done with the view to avoid injuring the posterior ligament and corresponding fibrous connexions between the femur and tibia, it being an advantage to preserve, if possible, these tissues, as they not only assist to maintain contact between the sawn surfaces, but also, should suppuration occur in spite of antiseptic dressings, they will in all probability prove a barrier against the entrance and burrowing of pus into the popliteal space.

As the *raison d'être* of this communication refers to my method of putting up the limb, I shall describe in detail the steps to be

adopted. Presuming that the operation will have been performed under an antiseptic spray, the spray should now be directed across the region of the knee, so as to avoid any unnecessary wetting of splint, bandages, &c. Carbolised sponges are to be maintained in contact with the angles of the wound, so as to absorb all blood-flow whilst the leg and thigh are being washed and bandaged.

The surgeon next applies a soft flannel roller evenly, but loosely, around the limb from the toes to a point about two inches below the inferior lip of the operation-wound, and over this a second roller is to be adjusted, thus providing the leg with a sufficiently thick and soft covering. In like manner the thigh from the groin to a point about two inches above the wound is to be loosely encased with a couple of flannel rollers. The limb being ready for application of the splint, the patient is to be brought *thoroughly* under the influence of ether, so as to produce complete relaxation of the muscles. The splint consists of two concave pieces of perforated iron—the one moulded so as to fit the posterior aspect of the leg, and the other adapted to receive the posterior surface of the thigh—connected posteriorly by means of a strong, flat, but narrow, bar of iron, so bent as to form an oblique step about three inches long, and having the end to which the leg-piece is attached exactly one inch in advance of that fixed to the thigh-piece. This apparatus is to be provided with pads arranged for leg and thigh—the leg pad being made thicker below than above—and then it is to be carefully adjusted behind the limb. A soft pad is now to be laid in front of the thigh near its lower end, and upon this pad a concave piece of iron about four inches long, by from two and a half to three inches wide, is to be placed. Sometimes I lay a square of poroplastic substance larger than the concave plate of iron between the latter and the pad. The next step is to firmly secure the thigh in the upper part of the splint. This is done by encircling the splint and limb with a strong strap which is to be tightly buckled across the upper part of the anterior small splint, whilst lower down the strap of a Petit's tourniquet is to be fixed, the brass of the tourniquet resting against the anterior splint. As both straps will have been drawn extremely tight, it is clear that one or two turns of the tourniquet will firmly press back the lower end of the femur, so as to render the anterior surface of that bone flush with the anterior surface of the tibia.

Entrusting the upper part of the limb to his assistants, the surgeon next proceeds to encase the foot in several turns of a

gypsum bandage, which is to be carried upwards, encircling the leg and lower part of the splint as high as the point at which the flannel bandage terminates. Whilst this is being accomplished the foot must be held at right angles to the leg, lest extension of the ankle should occur and prove a source of trouble at a later period. When the operator will have satisfied himself that the limb has been properly arranged and secured, the wound is to be closed, while drainage is to be provided for by having short, flanged tubes inserted, either at the angles of the original wound or through button-hole apertures which may be made still further back. After the application of antiseptic dressings the limb is to be swung by means of a loop of calico passed behind the leg-piece of the splint and tied to the bars of a strong and high fracture cradle. It will be seen that my apparatus forms a light, portable, but extremely secure, means for fixing the limb. A foot-piece is altogether unnecessary, as the gypsum bandage encircling the leg and splint constitutes a firm boot. Shortness of the thigh-piece, combined with suspension of the leg, enables the patient to assume the sitting posture and change position without risk or discomfort.

I have frequently encountered cases of articular disease where the morbid affection seemed limited to the soft structures, but where complete exposure of the bony surfaces disclosed the presence of localised caries and of suppuration in the osseous tissue. This fact alone would determine me against attempting to perform excision by making the comparatively small lateral incisions recommended by some surgeons. Moreover, an unwounded state of the integument in front of the knee cannot prove of any real advantage to the patient, as the rule, in my experience, has been for the central portion of the operation-wound to unite by the first intention, whilst at the time of putting up the limb the surgeon is enabled clearly to see as well as to feel, and of course to regulate, the respective positions of femur and tibia.

Whenever I have to deal with a cavity in the cancellous tissue of either the tibia or the femur, I scoop the space clear in the first instance, then by means of a small piece of fine sponge wetted with chloride of zinc solution (gr. 20, ad ʒi.) I mop the cavity thoroughly—in many cases I have judged it necessary to drill the bone, so as to make a free counter-opening from the deepest part of the bone cavity in the track of the operation-wound. I never sponge a wound in the soft parts with chloride of zinc solution, for I have found the salt to cause a very considerable flow of

blood-stained serum, calculated to prevent union by adhesion. I always arrest parenchymatous bleeding (which is sometimes inconvenient after the removal of Esmarch's bandage) by applying to the wound a succession of sponges squeezed out of *very* hot carbolic solution, after the method proposed by Dr. P. Browne. This proceeding will control oozing from the bone surfaces as well as from soft textures, and it in no way tends to interfere with the early development of repair.

I have never seen bleeding from a large nutrient artery in bone, but if the surgeon should encounter such, I think hæmorrhage could be at once arrested by plugging the canal with a pointed piece of decalcified bone cut from one of Neuber's drainage tubes.

ART. V.—*Remarks on Salisbury's Views relating to the Treatment of Phthisis.*[a] By HENRY KENNEDY, M.B., Dubl., F.K.Q.C.P.I.; Physician to Simpson's Hospital, and the Whitworth, Drumcondra; formerly connected with Cork-street Hospital, and Sir P. Dun's Hospital, Dublin.

IN the last number of the "Transactions of the American Medical Association," my attention was caught by a paper from Dr. Salisbury on the Treatment of Consumption. This paper, in several aspects, seems to me so remarkable as to entitle it to a special notice. To the author the profession is already indebted for other most valuable contributions to medicine, but this one is the most important of all. It relates to a disease which is not confined to America. On the contrary, it is so prevalent in Great Britain as to have been called the English disease. Hence its very frequency, to say nothing of its great mortality, entitles it to the most mature consideration we can give it. With these feelings I venture to bring forward the subject. I do not intend, however, to take it up in the general aspect—this would far exceed my present limits—but will confine myself to the more striking points arising from the perusal of the paper, which is itself written by Dr. Cutter, who acted as assistant to Dr. Salisbury, and opens by a prelude which states that the latter is a gentleman of fortune, who has devoted thirty years of his life to the investigation of this and kindred subjects. Now, Dr. Salisbury has discovered that the blood shows unmistakable evidence of a diseased

[a] Read before the Medical Society of the King and Queen's College of Physicians, on Wednesday, January 11, 1882. [For the discussion on this paper, see p. 141].

state for at least a year previous to the development of tubercles in the lungs, and that the microscope can very readily detect this state;[a] and he shows further that by direct treatment the blood can be brought back to the healthy standard, and so phthisis can be literally prevented. He goes on to state that this depraved state of the blood is mainly caused by the immoderate use of two articles of food—starch and sugar, and that by excluding these from the diet the blood rapidly regains its normal state of health. In support of these views Dr. Salisbury experimented on no less than 2,000 swine; about one-half of these were fed on food which did not contain either starch or sugar. These animals remained perfectly healthy, whilst the other half were allowed starch and sugar, and very many of these showed signs of disease in three weeks, which later on ended in the development of tubercles in the lungs, as proved by dissection after death. Similar experiments, but not carried to the same degree, were made on some men, with similar results.

The statement which I have just made embodies the main features of the views advanced by Salisbury, and it must be allowed that the first impression they convey might almost be called brilliant, they seem so plain and so practical. But possibly this very plainness affords a good reason for inquiring a little further into the matter before we can give in our adhesion to the views advanced. My object now is to bring forward the ideas which have occurred to my own mind on the subject. And, in the first place, it must, I think, strike anyone as very strange that the use of such substances as starch and sugar should be the chief factors in bringing about the state of the blood which precedes the development of phthisis, and which state I do not for a moment doubt exists. It is known to all that these two agents, and more particularly starch, exist in Nature in large abundance. It has been calculated indeed that two-thirds of all human food is made up of starch. I need say nothing here of the presence of sugar, as the argument applies equally to both. If, then, starch exists in the large proportion mentioned, and be the cause of phthisis, it seems to me the disease would then be tenfold worse than we really find it to be; and it must be allowed that it is an affection of the gravest class, both as regards the

[a] The changes chiefly consist in the presence of spores, mycelial filaments of yeast, enlarged white corpuscles, and the loss of the neurine of the red discs, owing to which they aggregate themselves into confused masses.

numbers attacked and its frightful mortality. But I might go even further, and almost say that the entire human family would be swept away were the argument sound—in fact, it proves too much; for whilst the use of starch may be described as universal, the phthisis which is said to follow is by no means so. And this view is supported by a most important admission which is to be found in the paper itself, for there I read that a similar state of the blood, which Salisbury says causes phthisis, also exists in other diseases, of which he names syphilis, rheumatism, paresis, typhoid fever, smallpox, erysipelas, and ague. Now to my mind this statement shakes the whole theory advanced. For surely if it were true there ought to exist a state of the blood which would be found to precede phthisis alone. It appears, however, this is not so, but that, on the contrary, several other most important diseases exhibit the same state of the blood. As opposed to what Salisbury has advanced, I might instance our own country, in which so many thousands of the people live upon a food essentially starchy, and yet there are no grounds for supposing, at least as far as I am aware, that phthisis exists in Ireland in greater relative proportion than in those countries where food of a different composition is used. In England, where a vast deal more animal food is consumed, consumption is at least as frequent as with us. As before stated, phthisis is thence called the English disease, and I must add it is hard to reconcile the views of Salisbury with these patent and well-known facts. For it must now be stated that the leading principle of Salisbury's treatment consists in the use of large quantities of animal food. He says that by this means the yeast, which according to him arises from the use of starch and sugar, can literally be starved out of the blood, and so consumption be prevented, or possibly cured. Now, I am very far indeed from denying that a liberal use of animal food is of great benefit under the circumstances, and on this particular point I shall speak again, but I cannot help thinking that too much stress has been laid on it, and that it is very difficult, if not impossible, to reconcile the statement with the wide-spread use of starch and sugar; for I must repeat that if Salisbury's views were true, in the literal sense in which he has advanced them, I cannot see why consumption would not be tenfold a more wide-spread and fatal disease than it is even allowed to be. Nay, further, it would be hard to explain how any at all could escape the disease, and to my mind there must be a something superadded to the state of the blood, on

which Salisbury places so much importance, before phthisis will declare itself. In other words, the cause—the primary cause, as Salisbury would put it—can, at the most, be only taken as a predisposing cause of the disease, and that it so acts by keeping the blood in an unhealthy condition.

In arguing thus against the views of Salisbury, I am very far indeed from wishing to depreciate them as a whole. It is only that I cannot give the same prominent position to one of them which the author does, and that what he makes the primary cause of phthisis I can look upon only as a predisposing one. In other respects his views seem to me of great moment, and I would specially note what the author has stated in reference to a pre-tubercular stage of consumption. This seems to me a very decided step in advance of the views hitherto held. It is perfectly certain indeed that the great majority of authors who have written on the disease speak of predisposition to the affection, as well as its hereditary character, as constituting important points in its natural history. It is one thing, however, to describe points like these which, at the best, have a certain degree of vagueness about them, and contrast them with the definite statement of Salisbury that, for at least a year before tubercles are deposited in the lungs, the blood is in a very disordered condition, as shown under the microscope, and that precisely as this state of the blood betters, so do the symptoms which so constantly usher in phthisis.

As illustrating the views just stated, it is right to say here that a detail of some seventy cases of phthisis is given. These are divided into three classes—those in which treatment was of no avail, those in which it produced a marked, though but temporary, improvement, and those in which what might fairly be called a cure resulted, or, as the author puts it, what would be called a cure in any other disease. I will not take on me to assert that these cases, even the most successful of them, show better results than others have attained. Such a point would be most difficult to determine absolutely. But it certainly must be allowed that the recovery of twenty-six from a disease like phthisis is a great success, and of which I guess few could boast, for this is the number the writer details, and it is to be noted that in several of them a family predisposition existed, and all must admit that these are the most difficult cases to better.

Leaving the question of treatment, I would call attention for a moment to the effect which Salisbury's views must have on those

of Niemeyer, now dead. It will be recollected that that author held that inflammation, and more particularly pneumonia, was the starting-point of phthisis—a view which, for myself, I could never accept. It was contravened by too many well-known facts. And now we have, in addition, what Salisbury has advanced as what he calls the pre-tubercular stage. A knowledge of this fact must place Niemeyer's views in their proper place—proving, in the first place, that inflammation is not the starting-point of phthisis; and, in the second, by explaining why it is that certain cases of pneumonia—and only certain ones, be it observed—run on into phthisis. In other words, the latter would not occur unless the system were predisposed to it. Many years since I recollect reading a paper in the *American Journal* on a disease which the author called "Pneumonic Phthisis"—a valuable contribution, as it appeared to me at the time.

It has been already stated that the main point of treatment recommended by Salisbury consists in the very liberal use of animal food, from which, however, strange to say, all the fat is to be removed; and, as bearing out this view, I do not find that he recommends cod-liver oil at all—a fact which must strike most of us with surprise.

The summary of treatment given will, I should say, be considered very elaborate. Into the details, however, I am not now about to enter further than to say they include exercise, baths, pepsine, pancreatine, phosphorus, strychnine, &c.; and, in addition, the drinking of half a pint of tepid water before each meal, for the purpose, as the author states, of keeping the stomach free of the yeast; whilst at the meal itself a cup of what is called clear tea, or beef tea, is to be taken.

This treatment, we must suppose, is to be adapted to the wants of each particular case, for it could not surely be all carried out in any one case. However it is to be used, it is plain that the very free use of animal food is the great leading feature of the plan. The author speaks of it again and again, and alludes to the great difficulty of carrying it out steadily—partly, in some instances, from the circumstances in which the patients were placed, but more particularly from the utter disgust the patients took to such a constant use of this kind of food. The details of many of the cases prove that the disgust could not be overcome, and indeed the fact is one which has been long recognised.

And now, having given this very imperfect sketch of the

Salisbury treatment of phthisis, it remains to say what conclusions may fairly be drawn from the entire paper.

First, then, I have to repeat that the establishing of a pre-tubercular stage, which can be easily ascertained by the aid of the microscope, seems to me the most important point in the paper. As far as I am aware it is a decided step in advance of anything yet known on the subject, and it is valuable in every aspect in which it can be viewed. True, indeed, only too many cases of even threatened phthisis show signs and symptoms about which there can be no second opinion. Still there are a large number in which doubts must arise, and here the aid of the microscope will be most valuable. Need I say either what an aid this instrument may prove in certain cases presenting themselves for insurance. But I need not dwell longer on its great value.

As regards the actual treatment of phthisis, as laid down by the author, it is perfectly well known to physicians that the free use of animal food is an old, old remedy for the disease. A century nearly has elapsed since an able English physician (Beddoes) wrote a work specially devoted to the subject, and from that period till the present time it may, I think, be assumed that a full diet of animal food constitutes a prominent part of the treatment—at least in all the standard English works of the last fifty years. Still the views of Salisbury go even further than this, and it remains to be seen whether they can be carried out to the degree he advises. That many phthisical constitutions will not bear the treatment I cannot doubt. Everyone must be familiar with the fact that, speaking generally, the digestive system is in these patients weak, and will not bear any unusual strain; or, as they express it themselves, will make them bilious. This has been consonant to my own experience. But I would add that when the tubercles have softened, and there is free expectoration, I have been often struck with the fact that then large quantities of animal food are easily taken. At any rate it would seem to be now an established fact that this kind of food is to be given as freely as the constitution of the patient allows; and this in both the pre-tubercular stage and when tubercles are deposited.

The large use of animal food, according to Salisbury, brings back the blood to a healthy state; and here I would observe that it seems strange the author has ignored some medicines which it cannot be questioned act powerfully on the blood. I surely cannot be wrong in naming iron and cod-liver oil as two of these. The

value of the former can scarcely be overrated; and of late years the varied forms in which it has been presented add much to its powers. Many of its preparations, indeed, are what might be called elegant; and the certainty with which, in most cases, it acts cannot be doubted. Physiology, too, has shown that it is on the red corpuscles it chiefly shows its powers, and these are constituents of the blood to the state of which Salisbury has drawn particular attention. Similar remarks might be made about the cod-liver oil.

Were this the place for it, I might also draw attention to other drugs capable of altering the state of the blood; and where animal food could neither be used in large quantity, nor be obtained, it is a matter of considerable moment that we have other measures to which we may have recourse. I may instance hemlock, the mineral acids, uvæ ursi, liquor calcii chloridi, &c. The first of these I would specially mention. The rapidity with which it acts is very striking; but having spoken of it on another occasion I need not do so again.

In concluding these remarks it seems scarcely necessary to say that the physician is to confine his treatment neither to food nor yet to medicine. A judicious combination of the two must be the plan from which he may hope to obtain the best results.

ART. VI.—*Case of Carbolic Acid Poisoning.*[a] By ROBERT S. ARCHER, A.B., M.B., Univ. Dubl.; Physician, Netherfield Fever Hospital, Liverpool.

CASES of carbolic acid poisoning naturally gravitate into two classes, with respect to the means by which the noxious substance has been introduced into the system. The first of these will include those cases in which the toxic effects become manifest during the period in which this substance is being employed as a surgical dressing to extensive wounded or abraded surfaces, or when large cavities, such as those produced by abscesses of considerable dimensions, are being washed out with a solution of this drug, or where it has been used in enemata. Of this class I have never seen an instance. Under the second heading are to be classed those cases in which it has been taken into the stomach; and under this division there will be usually found two subdivisions—viz. (1), those cases in which the drug has been taken

[a] Read before the Liverpool Medical Institution.

accidentally, and (2) when it has been taken with a view of destroying life on the part of the patient. Under the latter of these subdivisions the case I am about to relate falls. Under the former are included those in which it has been administered through the carelessness of the patient or of his attendants:—

Case.—A woman of about forty years of age was seen three and a half or four hours after having taken a wineglassful of the crude, brown, syrupy carbolic acid, such as is used for disinfecting purposes. I am inclined to think the patient was not strictly temperate. About half an hour after swallowing the acid (as was subsequently learned) she complained of epigastric pain, and said she would go and lie down. Nothing further was known of her condition till half an hour before I saw her, or about three hours after having taken the poison. At this time she was found by her sister lying on the floor in a back room, perfectly unconscious. On my arrival she was in bed in another room, to which she had been removed. She was in profound coma, breathing stertorously; the conjunctivæ were totally insensible, the pupils were contracted to the size of pins' heads, and there was complete relaxation of the entire muscular system; there were some abrasions about the inside of the lips and cheeks; the palate was dry and pale, as if parboiled; skin cold and clammy; pulse 120, very feeble and thready. On this occasion I detected no peculiar odour from her breath, and her sister could give me no clue as to what she had taken. No trace of a bottle or any other vessel containing poison could be found. It was only conjectured that she had taken poison of some kind, and from the symptoms I had a strong suspicion that it was carbolic acid in some form. After her recovery she informed us that she had procured a pennyworth of the fluid in a cup at a neighbouring druggist's, as soon as the shop was open in the morning, and that after drinking the whole of it she destroyed the vessel. After taking the acid she told us that her "lips first became white and then black."

All our efforts to arouse the patient were entirely ineffectual. There was not the slightest approach of response to various stimulants applied to the cutaneous surface—she lay a heavy-breathing insensible mass. An emetic of mustard and warm water could not be administered, and we gave up the attempt to do so after several failures. The length of time that had elapsed since she swallowed the poison seemed to preclude any hope of benefit from this proceeding, even if successful, and the use of the stomach-pump also appeared likely to afford no relief to the urgent and very grave symptoms. There was no apparent effect produced by strong liquor ammoniæ applied to the nostrils. I ordered mustard poultices to the epigastrium and the calves of the legs, more as a matter of routine than anything else, gave a most unfavourable

prognosis, and left, not at all expecting to see her alive again. Calling in about two hours, I found her, if possible, in a more precarious condition. Pulse had now increased to 140, running and thready, hardly perceptible. There were slight twitching movements in the feet, particularly localised in the great toes; a faint odour of carbolic acid was perceptible from the breath, and my conjecture concerning what she had taken was confirmed. Whilst pondering over the case, it flashed across my mind that I had read somewhere or other of ether being employed subcutaneously in a case of coma, &c., from carbolic acid, but, if I recollect aright, with no good effect. Nevertheless I determined to make a trial of the remedy, believing that it could possibly do no harm, but, still having little faith that it would act as a restorative, I determined merely to use it experimentally. I accordingly injected 40 minims of pure ether, such as is used for producing anæsthesia, by four punctures on the flexor aspect of the right forearm. After each injection she seemed to revive slightly, and the pulse appeared to become somewhat stronger. On making another visit after four hours had elapsed, I was not a little astonished, and considerably gratified to find that my patient had quite regained consciousness, and that her condition was very much improved in every respect. I learned that about two hours after my last visit she had vomited a small quantity of glairy mucus, through which were scattered coffee-ground-like particles, and having a strong odour of carbolic acid. Before the vomiting set in she had some convulsive movements in the superior and inferior extremities, more marked in the latter. Her pulse was reduced in number and stronger. I ordered her to have draughts of olive oil, and a little milk at times. In two hours more her pulse was reduced to 84, consciousness continued, and the pupils were dilated and acting. There was a loose gurgling cough, as if caused by some secretion lodging in the larynx and trachea. She dozed at times. There was a complaint of soreness in her chest, as she expressed it herself, "inwardly." To continue the olive oil and to have half an ounce of castor oil. Next morning her pulse was 95, full and strong, and she had slept well during the night. She complained of soreness in her throat and chest. Thirst; skin warm; tongue coated with a white fur, some white shreddy material hanging about its edges and on the inside of the cheeks. I could not get a satisfactory look at the throat, owing to spasm of the lingual muscles when an examination was attempted. After my departure last night she had a copious motion from the bowels, and passed some urine, which was reported to have been "quite black."

At my visit on the third morning she was reported to have had a good night; pulse 110. She seemed feverish; skin hot; temperature probably between 101° and 102°. Lips brown and parched; tongue cleaning; soreness in chest continuing; cough troublesome; and some

moist râles were detected over the chest. Vomited some milk and oil on two occasions since my last visit. Ice, which she had been ordered to suck, proved very grateful. Urine was passed freely, and in tolerable quantities, of a greenish-brown colour, with small oil-globules floating on its surface.

During the next four days progress towards recovery was sure and steady. There was now scarcely any soreness in the chest, and much inconvenience was not caused by swallowing. Condition of lips and tongue improved. The fauces were found to be congested all round. Pulse about 90. Sleeps well. She now complained of numbness at the seat of punctures. On testing this condition I found limited areas of anæsthesia surrounding the puncture marks, but especially defined at their distal sides. The urine had regained its normal colour. Bowels regular. Coughs occasionally, and brings up small quantities of thick greenish mucus, at times streaked with blood. Some râles still audible in the chest. Vomiting has ceased.

During the next three days there was still further improvement. Towards evening there was a complaint of dryness and soreness of throat. Pulse had now settled down to 80, full and regular. The anæsthesia about the seat of punctures was replaced by soreness and a slight amount of induration, both of which subsided shortly. From this on convalescence progressed uninterruptedly.

There are several circumstances connected with this case which appear to be worthy of consideration, and to which I would briefly direct attention.

Recovery after so large a dose of carbolic acid calls for comment. The very concentration of the dose may have contributed in no small degree to this favourable issue. This assertion may appear anomalous, when it is considered that, as a rule, poisons act more energetically, and with a more rapidly fatal result, in proportion to the largeness of the dose. But this case seems to be an exception to the rule. I will endeavour to explain this apparent anomaly.

Now, the effect of a strong solution of carbolic acid upon the external cutaneous surface is to produce a brief primary sensation of pain, followed at a larger or shorter interval of time, in proportion to the strength of the solution by anæsthesia, attributable to the coagulation of the albumen of the tissues. If this be true with respect to the skin, arguing from analogy, how much more likely is it to be so when the delicate mucous membrane of the stomach is subjected to its influence. The severe toxic effects were probably produced by the absorption of a certain definite

quantity of the acid before the stage of hardening and anæsthesia had been established, and after this had occurred the absorptive process ceased. If this theory be correct, it will be observed that up to a certain point concentration of the poison has a preservative influence as regards the final result, provided that the patient have vital energy enough to tide over the primary profound shock to the nervous system. Now, granting that there is some reason for the soundness of this view, you will readily perceive how impossible it would have been for the hardened and benumbed mucous membrane to absorb stimulants introduced into the stomach, and therefore the utter uselessness, if not absolute harm, of thus attempting to revive the failing powers. Under these circumstances, ether used subcutaneously, and stimulants applied to the skin, would appear to be the means to which we should trust. It is, I think, not at all unlikely that these measures had some effect in bringing about reaction.

Should it ever fall to my lot again to have to treat a case similar to this one, I should pursue the same course of treatment, with the addition of the use of the pump, and the washing out of the stomach with olive oil.

A consideration of the several points in this case seems to warrant the following conclusions:—

1. That the nervous centres are profoundly affected shortly after the reception of the poison into the stomach.

2. That a large dose of the poison, when concentrated, may be protective as regards the final result, by rendering the mucous membrane of the stomach non-absorbent.

3. That a moderate dose, considerably diluted, may prove fatal, the gastric mucous membrane retaining its absorptive powers.

4. That when the dose is concentrated, the introduction of stimulants into the stomach is not likely to be of any use, but stimulants used subcutaneously may prove beneficial in bringing about reaction.

5. That no permanent injury follows as a necessary consequence from a concentrated dose.

ST MARY'S HOSPITAL
RADFORD
LIBRARY
MANCHESTER

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Koumiss, or Fermented Mare's Milk, and its Uses in the Treatment and Cure of Pulmonary Consumption and other Wasting Diseases. By GEORGE L. CARRICK, M.D. London and Edinburgh: William Blackwood & Sons. 1881. Crown 8vo. Pp. 294.

SMALLPOX and pulmonary consumption used to be by far the largest contributories to the death-rate; and, the former having been "scotched" by inoculation and vaccination, the latter continued its mournful pre-eminence. Up to the middle of this century, although medicine did much to mitigate the lot of the phthisical sufferer, it hardly pretended to cure him; and the first serious effort in this direction was the application of cod-liver oil to the prevention of and the cure of the early stages of consumption by Professor Hughes Bennett. Before this, cod-liver oil was little known, and was occasionally used in chronic rheumatism; it has ever since been a widely employed and trusted phthisical remedy. At best it is a most unpleasant medicine, and the wideness of its use, notwithstanding the disgust which it inspires, is the surest testimony of its excellence. It is related of the late Earl of Derby, who was a martyr to gout, that on one occasion a merchant sent him a supply of sherry, informing him that as long as he confined himself to it he would continue free from his enemy; to which the illustrious statesman laconically replied that, "he had tasted the sherry, and that he preferred the gout." So it is with cod-liver oil, of which some consumptive invalids will not, and others positively cannot, partake.

We have read with great pleasure and profit Dr. Carrick's volume, describing a new remedy which appears to us to do much more than cod-liver oil can accomplish, and to be at the same time easy and agreeable to take. Dr. Carrick, formerly Resident Clinical Assistant at the Consumption Hospital at Brompton, has acted for many years past as Physician to the British Embassy in St. Petersburg, in which city he practises. He states that in the

year 1871 he visited the Steppes as a tourist, and was struck by the extraordinary effects produced by koumiss in the cure of consumption. Since that time he has visited the Steppes six different times, and has thoroughly investigated the subject, and now gives a full exposition of the whole matter in an interesting little volume which, we have no hesitation in stating, forms an era in the treatment of this formidable malady.

The Steppes, or vast grassy prairies of South-Eastern Russia and Central Asia, are peopled by tribes of nomads, whose only possessions consist of vast herds of horses, sheep, and cattle, which graze upon these plains. Almost every nation has its own peculiar alcoholic drink; and so the nomads have used from time immemorial the fermented milk of their mares. Herodotus saw them prepare it, and Marco Polo, the great Venetian traveller, also describes its manufacture, which still continues the same. The first person to apply it to medical uses was Dr. John Grieve, a Scotch surgeon in the Russian army, who, in the year 1784, noticing its great fattening power, suggested it as a therapeutic agent in wasting diseases, in a memoir read before the Royal Society of Edinburgh. Since that time the remedy has never fallen into disuse, but the difficulty of reaching it prevented its extensive application; for it is a great fact that it does most service when taken on the spot where it is produced—a fact to which the dry, balmy air of the Steppes contributes.

In the year 1858 Dr. Postnikoff, struck by the extraordinary cure of a phthisical patient, started an establishment at Samara, a town in Southern Russia, on the margin of the Steppes, for the koumiss treatment of consumptive invalids. There genuine fresh koumiss was made from the milk of the Steppe mares, and by the hands of Kirghiz servants, and was administered to patients residing in a dwelling provided with all the comforts and resources of modern civilisation. Nor was the journey to this sanitarium too severe. Eighteen hours on the railway conveyed the invalid from St. Petersburg to Ribinsk, a town on the banks of the Volga, whence a comfortable steamboat transported him in three days and a-half of smooth river voyaging to his destination. From this time the remedy[a] advanced by leaps and bounds, private establishments

[a] It is strange that the late Professor Lebert, of Breslau, in 1874, in his work on Diseases of the Chest, speaks most unfavourably of the koumiss treatment. His views, however, were founded more on chemical and physiological reasoning than on clinical observation.—Klinik der Brustkrankheiten, von Dr. Hermann Lebert. P. 555. Zweiter Band. Tübingen. 1874.

multiplied, and in 1870 Count Milutin, the Russian Minister of War, instituted a Koumiss Hospital for soldiers. The principal depots are at Samara, and also at Orenburg, a town in the heart of the Steppes, which is reached by rail in fifteen hours from Samara.

The milk of the mare differs in many important points from that of the cow, and more closely resembles human milk, or that well-known nutritious agent, ass's milk. It is very rich in milk-sugar and poor in cream; but its most striking point of difference is the nature of its casein, which is of a very light, flocculent, and digestible character. Dr. Carrick gives elaborate chemical details of the composition of the several milks, and of the mode of converting that of the mare into koumiss, which appears to be a very delicate process, requiring practice, care, and experience. The fermentation which occurs appears to be a combination of the lactic and alcoholic, the latter predominating. No milk suits except that of the Kirghiz or Bashkir mares, and these only when fed on their own native pasturages—if brought even for twenty-four hours on rich grass the fat increases, and butyric fermentation, which spoils the koumiss, is apt to occur. The utilitarian position of these mares is entirely different from the corresponding animals in these countries, which are freely used for riding or draught. In the Steppes horses are exclusively used for riding; the few carts and ploughs are drawn by horned cattle, and mares are reserved for breeding and milking. Rest appears essential to milch cattle; and Henry and Chevalier have shown that when donkeys are jaded their milk becomes heated (s'échauffe), diminishes in richness, and sours rapidly. Centuries of this practice have changed the nature of the animal, and a Steppe mare resembles as to milking our domestic cow. The author states that the mare will not give milk unless the foal be present; and that a well-developed sphincter in the nipple enables her to regulate this. He adds, on the authority of M. Roulin,[a] that semi-wild cows in South America have the same peculiarity—a curious instance of evolution actually going on under our view.

The diseases for which koumiss is recommended are—albuminuria, diabetes mellitus, and pulmonary consumption; and to the last the author gives the most of his attention, and recounts an array of successful cases of the most startling character.[b] Numbers

[a] Memoirs of the Institute of France. Vol. VI., p. 334.

[b] There is one very interesting case where the patient steadily increased in weight notwithstanding accompanying extending pulmonary disintegration distinctly shown by the stethoscope.

of sufferers, in a state so advanced that we should certainly here regard them as doomed, have been cured, and are now in perfect health. Of course it is not pretended to be a panacea, and when the disease has reached a certain point it is useless. There is no doubt, however, that it will cure at a point long beyond that at which cod-liver oil ceases even to benefit. We have ourselves tasted real koumiss, and it is not an unpleasant drink, creaming like very still champagne, and one that people get very fond of; which is certainly more than even Dr. De Jongh could say for his remedy. There are three varieties (light, medium, and strong), and the consumptives drink it in enormous quantities, varying from five to eighteen (champagne) bottles a day—of course all beginning with one or two bottles. It has a wonderful effect in stimulating the appetite for food and in enabling the system to assimilate the increased quatity of food so taken—a circumstance probably due to the products of the lactic fermentation. Under these circumstances it is not surprising that it causes a great increase of weight. A number of consumptives, after two months' koumiss, showed increases, varying from seven to twenty-four pounds, with an average of eleven and a half pounds; and one individual, in several years, increased fifty-four pounds. It is not indicated in hæmoptysis or in plethoric conditions of the system; it is too blood-making. Koumiss has been lately a good deal used in these countries in anæmia and other cognate cases; but it has been made of cow's milk, which is chemically unfit for the purpose. Cow's milk must be skimmed to get rid of the fat, and must be then artificially sweetened with sugar of milk. An approximation to mare's milk is thus attained, but the heavy casein remains and spoils the product.

The great difficulty of the British invalid appears to be—that as light koumiss, like light wine, cannot travel to the sick, the sick must travel to it; and this is even still a stumbling-block. St. Petersburg can be comfortably reached from Hull or Leith in six or seven days, and for those who are good sailors this voyage in the fine parts of the year is agreeable and health-giving. The journey on to the Steppes has been already detailed. The destination can be reached in about half the time by Cologne, Berlin, and Moscow, but it is all by rail; and such a journey—even with the aid of (according to Mark Twain) "that culmination of all human charity and kindness, a sleeping car"—is penal servitude to the healthy and impossible to the sick. The expense of the journey is

reasonable; and koumiss at Samara costs sixpence a bottle, and at St. Petersburg three times as much. Health is worth a great deal, and we have no doubt that many persons will find their way to Dr. Postnikoff's establishment.

In a work of such sterling merit, and from the perusal of which we have derived so much instruction, we are unwilling to be hypercritical. We must, however, deprecate the statement (p. 57) that "in dairy districts cows are only milked two times a day," not as a physiological fact but as a grammatical expression; we are also doubtful of the expression (p. 66) "milk mares," instead of the more usual "milch." Dr. Carrick has resided a long time in Russia, where he has mastered the Russian language, with its terrible declensions, and may well be excused for any lapse in the *nuances* of his native tongue. The statement (p. 176) that stenosis prevents the contents of the *right* ventricle from fully emptying themselves into the aorta at each systole is evidently due to a typographical error, and we only notice it in the hope of seeing it corrected in a future edition, which will certainly be called for. The volume is brought out in Messrs. Blackwood's best style. A neat map showing the different routes in various coloured lines is appended.

Q.

St. George's Hospital Reports. Vol. X. London: J. & A. Churchill. 1879. 8vo. Pp. 662.

The first 476 pages of this bulky volume are occupied by carefully drawn-up reports of the principal cases treated during the year 1879 in the medical and surgical wards, and in the obstetrical and ophthalmic department of the hospital; the curator also contributes notes of the results of the most interesting autopsies made by him on patients who had died in the hospital during that period. The concluding portion of the volume contains an obituary notice of Mr. Thomas Tatum, Consulting Surgeon to the Hospital, who died on 5th September, 1879, and several original papers and clinical lectures by the members of the hospital staff. The first and one of the most interesting of these is a clinical lecture given by Mr. T. Holmes on a case of ileo-femoral aneurism occurring in a young man, aged twenty-five, a drunkard, who entered the hospital on 26th July, 1879, with a rounded pulsating tumour "reaching from about the apex of Scarpa's triangle to an inch above Poupart's ligament, the position of which structure was marked by a deep constriction on the tumour." The first treat-

ment adopted was on 30th July, compression being made on the common iliac by means of a Lister's tourniquet, and maintained continuously for 6 hours 40 minutes. This produced a temporary improvement in the condition of the aneurism; but five days after (on 4th August) gangrene commenced in the foot, and the tumour again increased rapidly. The treatment then adopted was immediate ligature of the common iliac (the ligature used being made from the aorta of the ox, as recommended by Mr. Barwell), and, on September 11th, amputation of the leg below the knee. The gangrene having extended up the stump, a second amputation (through the thigh) was done on 23rd October; and eventually, having passed through an attack of pleurisy and of thrombosis of the other leg, the patient recovered, cured of the aneurism. The points of interest which Mr. Holmes thinks are illustrated by this remarkable case are the great risks incident to the compression of a large artery close to a very large aneurism, as the accompanying vein must necessarily be compressed at the same time, and this, joined to the pressure caused by the presence of the tumour, may cause an amount of venous obstruction sufficient to produce gangrene, as in the present case. Another objection to rapid compression is that the sac becomes filled with soft, imperfect coagula, which may act as an irritant to its tissue and cause it to inflame, and perhaps suppurate. By the use of the animal ligature he was relieved from the apprehension of secondary hæmorrhage, but for some days he was in dread that the ligature might soften and circulation recur. Mr. Holmes reminds us that, when using animal ligature, we must see that they have been previously well softened, and they must not be knotted too tightly.

Mr. Holmes also contributes the notes of two other cases—one "On the Reunion of an Old Fracture of the Patella with Wire Suture by the Antiseptic Method," the other "On a Case of Successful Subperiosteal Resection of the Tibia, in which the Ankle-joint was also implicated."

Mr. Pickering Pick, in a short paper, reviews the treatment of wounds after amputation during the past fifty years. In his opinion the greatest advance made in this particular branch of surgery is the knowledge of the correct application of the drainage tube. With regard to the antiseptic treatment of Lister—though he admits that in many of his cases (especially among children) it has proved most successful—he cannot allow all that is claimed by the most ardent followers of Lister. He objects that, "taking the

generality of operations treated after Lister's method, there appears to be an absence of vitality about them," "suggestive of want of action and a sluggishness to heal." He had also had a case in which, though every precaution was taken, the treatment failed, foul suppuration setting in with decomposing pus.

Mr. Edward C. Stirling contributes a long and exhaustive paper on the various eruptions of the skin which have been observed to occur after recent operations and injuries, in which he endeavours to prove that we have two great classes of traumatic eruption—"one, veritable scarlet fever, to which the existence of a wound in some manner renders certain individuals peculiarly liable; the other consisting of non-infectious rashes, often easily recognisable, as erythema, urticaria or herpes;" but often again so like scarlet fever and associated with such symptoms as "to make a differential diagnosis almost impossible where a definite history of infection is not forthcoming." Even when the rash is that of true scarlatina the symptoms are constantly modified, the throat being rarely affected. In his opinion the state of the tongue is the most certain sign to rely on in separating scarlatinal from non-scarlatinal cases, the "strawberry" tongue being hardly ever present in the latter.

In the notes of five cases diagnosticated as tubercular meningitis, and treated by Mr. H. Barrett, and of which cases three resulted in recovery, Mr. Barrett states that in the favourable cases the administration of iodide of potash and belladonna appeared to have a salutary effect upon the symptoms.

Mr. Cottle gives the particulars of a case of that rare affection, herpes gestationis, which occurred in a pluripara, aged thirty-eight, who in all her eight pregnancies suffered from the third month until delivery from an eruption of large bullæ, chiefly in the arms and legs, which disappeared when lactation began.

Mr. William Bruorton successfully treated a case of trismus in a child nine days old by the administration of one grain of hydrate of chloral (in milk) every two hours.

Mr. Bertolacci contributes the notes of a case of diabetes which illustrated the inefficiency of even very large doses of codeia, carbolic acid, and salicylic acid in this disease. The patient was treated with codeia for 39 days, the initial dose being $\frac{1}{4}$ gr. three times daily, this being gradually increased to 8 gr. doses. Carbolic acid was administered for 33 days, the dose being gradually increased to 19 grs. three times daily. Salicylic acid was then administered in 8 gr. doses three times daily; but, after careful examination of the

state of the urine and the condition of the patient, Mr. Bertolacci was obliged to conclude that none of the drugs exercised any controlling influence over the disease.

Mr. Bertolacci also describes a modified method of using Fehling's solution in estimating the amount of sugar in diabetic urine by volumetric analysis. Instead of heating the cupropotassic solution and adding the urine to it until all the blue colour is discharged, he dilutes the urine with nine times its volume of water, raises its temperature to a few degrees below boiling point, and then adds the Fehling's solution gradually to it from a burette. He claims that by this method is afforded a much easier and more exact means of determining when the equivalent point is reached than by the ordinary mode of conducting the experiment, inasmuch as a contrast and not a fading of colour is the indication.

Syphilis and Local Contagious Disorders. By BERKELEY HILL, M.B., Lond., F.R.C.S.; and ARTHUR COOPER. Second Edition. 1881. 8vo. Pp. 636. London: Smith, Elder, & Co.

THE second edition of this book, which was published last year, is well worthy of the special notice of the profession. In their Preface the authors frankly say:—"The advance in our knowledge of venereal diseases since the first edition of this work was published has been so great that we have deemed it advisable to re-write the whole of the text. While doing this we have endeavoured to include in the new edition the pith of what seemed to be the most valuable among the vast quantity of literature that has appeared on this subject during the last thirteen years." In undertaking to do this, with a determination to do it well, the authors set themselves no easy task.

Having read the book with care, we are bound to admit that the task has been accomplished well, and that the work does contain not only the pith of the literature which has appeared on this subject since the publication of the first edition, but also the cream of what had appeared before that date, while at the same time much of the scum which had come to the surface has been taken off and prevented from continuing to conceal and confuse the true nature of the various venereal diseases.

The great value of the work consists in the systematic manner in which the chapters are arranged, and the complete index from which reference can be easily and rapidly made to any subject in the text.

The chapter upon Syphilis of the Nervous System, by Dr. W. R. Gowers, is indeed a valuable addition to the work, and condenses into one essay a great amount of useful knowledge which has hitherto been scattered through the writings of numerous authors.

The chapter on Prophylaxis, although very short, contains statistics which must convince any unprejudiced person of the useful effect of the Contagious Diseases Acts in controlling and diminishing syphilis in the towns in which they are in force. It also clearly defines the conditions under which any person who has contracted syphilis may be justified in undertaking the responsibility of marrying, which is a matter too often not sufficiently considered or impressed upon young persons contemplating matrimony.

There is a long list of formulæ appended which will no doubt assist many practitioners in the selection of the most suitable remedies and the manner of applying them.

On the whole, the book is a valuable addition to the literature of the profession, and certainly more likely to be of practical use as a text-book and book of reference than any other that we know of upon the same subject.

Lectures on the Parasitic Diseases of the Skin, Vegetoid and Animal. By James Startin. London: H. K. Lewis. 1881.

Mr. Startin was prompted in an evil hour to write and, worse still, to publish this book, and we would willingly pass it by without notice were it not the duty of a reviewer alike to praise good and true work and to condemn what is worthless. We will let our readers judge of Mr. Startin's grammar, orthography, and scientific attainments by a few extracts which it would be waste of space to multiply.

The annular form of ringworm is usually accepted as a fact not at present susceptible of ready explanation, but Mr. Startin sees clearly that "the circular appearance assumed by these diseases, ringworm and others, must be due to the way in which the spores float to the edge of the perspiratory moisture or drop as it exudes from the skin, which naturally spreads in a circular direction, and in close proximity to the hair roots" (p. 18).

One more sentence may be quoted which staggered us, especially the parts italicised—"I believe these fungi are in every instance

introduced upon the surface of the skin, more especially upon that of children and those who are accustomed to self-neglect, whose skin-surface is always rich in effete matters—dandruff, dust, diseased or atrophied hair, and *the salts and products of its sebaceous and perspiratory apparatus, which excretions from their acid reaction and composition, composed chiefly of gelatine, margarine, and margaric acids*, I firmly believe the acid products of the sebacious (*sic*) glands, under certain conditions of health, to be the chief source of growth and development of these fungi, and much influenced by contact with the *alkaline* secretion of the perspiratory glands, causing slight fermentation when not in that healthy and exact neutral proportion to be harmless" (p. 15).

As samples of spelling we note *innoculation*, *cloasma*, *grubbs*, *ovium*, from among many, and Professors Vidal and Henle will scarcely recognise themselves as Vidall and Heale.

A Practical Treatise on Hernia. By JOSEPH H. WARREN, M.D. Second Edition. Boston: J. R. Osgood & Co. London: Sampson, Low, & Co. 1882. Pp. 428.

THE present edition is in many respects an improvement on the former. The book has been mostly re-written, and six "wholly new and carefully written chapters have been added." It is a comprehensive monograph on the subject of hernia, and is written in a clear and concise style. There is perhaps too much of egotistical display in the work, and we find few methods or instruments of other men described which have not been modified or "improved" by the author. Added to this, we find twelve pages at the end of the book occupied by "Recommendations and Reviews of the author's labours and studies in developing the subject of Hernia," which we think hardly enhances the value of the work.

The book is one, however, well deserving careful study, and is essentially practical. The arrangement of the subject is good, and the plates, especially those illustrating the anatomy of the parts engaged, are well executed.

Chap. VI., in which the author describes minutely his method of injection for the radical cure of hernia, is well deserving of attention. The special instrument he advocates is a syringe, which consists of a barrel, holding about 60 minims, and carefully constructed to prevent any possible entrance of air. The needle is flattish, oval in shape, and throughout its whole length partakes

of a spiral twist, so that it will, of necessity, revolve as it enters the tissues, and by such revolving penetrate the skin and other integuments much more readily than is possible with a straight blunt-pointed instrument. The needle, being oval, makes a wound of the same shape. In this way there is a more ready coaptation of the wounded tissue than would be possible with a round puncture. The needle is pierced with ten openings upon its sides, which causes a more free and equal distribution of the fluid injected.

The object he seeks is to inject a solution round the rings which will cause the exudation of a plasto-lymph, which eventually occludes these openings. The solution he recommends is one of quercus alba, first recommended by Dr. Heaton. His formula is "to evaporate the fluid extract of oak to about the consistence of glycerine, add sufficient absolute alcohol to reduce it about one-half, and then add about one-half a drachm of sulphuric ether to the half-ounce of fluid." In most cases ten to twenty-five drops will be sufficient.

The method of operating on inguinal hernia is thus described:— The patient having been placed on an operating table, so as to relax the parts, "we seek the hernia to be operated on, and after reducing the intestinal sac and omentum by taxis, we pass the left middle finger up the spermatic canal until we come to the inguinal ring. The end of the middle finger, being slightly raised as above mentioned, is felt by the forefinger, which also helps us to indicate the exact point, and is a guide to insert the point of the instrument. Having ascertained that the ring is well open, and free from attachments or adhesions to the returned sac, we begin to insert the needle at the lower portion of the ring, where we feel its edges through the abdominal parietes. The needle should always enter this lower portion of the ring, as in passing obliquely upwards and backwards it is less likely to wound either column of the internal ring. Great care should be taken in inserting it through the integuments and superficial fasciæ, so as not to wound the external pillar, but to enter the canal at once. The needle then should never be passed in a perpendicular direction, as there is thus danger of wounding the spermatic cord, but it should receive the necessary obliquity as soon as we feel that it has passed through the integuments. . . . . When we have passed the needle through the integuments, we begin to open the valve, and slowly push the needle in the direction already indicated. As the needle is thus inserted, it revolves and injects the fluid in

sufficient quantities to cover well the external and internal rings. The needle is now slowly withdrawn, still injecting fluid in its backward motion. As soon as the needle is withdrawn, pressure is made with the ends of the fingers over the wound and rings for five or ten minutes, until the smarting and throbbing pain subsides." A pad is then firmly secured in position, and the patient placed in bed. The most careful after-treatment "should be continued for at least a week or ten days, the patient lying in bed, and as much as possible upon his back. The first four days he should remain constantly upon his back, as any other position might injure the process of adhesion of the rings caused by the irritant. . . . . When we allow the patient to stand upon his feet for the first time, we should support the injected parts with the tips of the fingers, and on no condition remove this support while he is standing. He should not be allowed to cough, bear down, or make any undue exertions for two or three months at least. A bandage or truss should now be worn for from three months to a year, or even longer, if the patient follows any occupation where great violence or powerful exertion is liable to occur. After this, if the rings remain occluded and firm, he may dispense with the truss or bandage."

Dr. Warren has found this operation most successful in his hands. He says:—"In my personal experience I have yet to see a case of relapse after a cure has been perfected, nor do I believe such a case will occur except in extreme old and congenital hernia, or as the result of undue straining due to convulsions, or to some other cause." Again he tells us he can "make an estimate based upon the cases I have thus far treated, and should judge that fully 80–85 per cent. of all I have operated on have been successfully cured."

The author is evidently enthusiastic about this method of procedure, and certainly the success he reports is sufficient to warrant his urgent desire that others should try this method. To those interested in the subject of hernia generally, and in cure of reducible hernia especially, we can cordially commend this work.

What to do in Cases of Poisoning. By W. MURRELL, M.D. London: H. K. Lewis. 1881. 16mo. Pp. 95.

As might be expected from Dr. Murrell's training and antecedents, this is an excellent and reliable little compendium, which fairly

fulfils its object of giving plain, straightforward directions for the treatment of cases of poisoning. It is clearly arranged both as to matter and type, and contains, in a very small compass, a large amount of valuable information. We strongly recommend every hospital house-surgeon and resident pupil to procure a copy and make himself master of its contents, after which he will not feel at a loss what to do in almost any imaginable case of poisoning that may suddenly present itself for treatment.

A few misprints are noticeable, and some unnecessary repetitions (*e.g.*, pp. 38 and 64, 60 and 68), which could be avoided by cross-references, as is done in other instances in the book. We suggest that a minim measure would be a useful and indeed a necessary addition to the "Antidote Bag," and in the next edition Dr. Murrell should be careful to indicate the dose of powerful fluid medicines (*e.g.*, solution of sulphate of atropia) in every instance by minims and never by drops.

Atlas of Skin Diseases. By Louis A. Duhring, M.D. Part IX. Philadelphia: Lippincott & Co. 1881.

With the issue of each part of this fine atlas we have had the pleasure of bringing it under the favourable notice of our readers. This part concludes the series, and without repeating the commendations already bestowed upon it, we may say that the atlas in its completed form is the best and cheapest atlas of skin diseases with which we are acquainted, and reflects the utmost credit upon its author and its publishers. The plates are uniformly excellent and life-like, and the explanatory text is as good as we have a right to expect from such an accomplished physician as Dr. Duhring.

The diseases portrayed in this part are two grades of eczema rubrum, one on the arms and one on the leg; pemphigus; and ecthyma. We heartily wish the undertaking the measure of success which it so justly deserves.

The New Sydenham Society's Lexicon of Medicine and the Allied Sciences. Parts IV. and V. London: 1880–81.

It is some satisfaction to see on the title-page of the fifth part that Vol. I. is now completed, and that the compilers have, after two years' toil, brought their labours so far as the word *Cetonia*, which, we learn, is "a genus of pentamerous lamellicorn Coleoptera

living on vegetables," one species of which is a popular remedy in Russia for rabies. This amount of progress has been accomplished at the expenditure of 800 pages of closely printed matter; but as this represents about one-sixth of the entire work, we may at the present rate of issue look forward to the completion of this gigantic Lexicon in some ten years hence, when possibly the developments of science and the ever-multiplying load of new words, good and bad, will create a demand for a new and enlarged (!) edition. To speak seriously, is it not high time for the editors to put on their considering caps as to the best way of restricting their laborious task to accurate definitions and to etymology, and to forbear an attempt, necessarily a futile one, to write a condensed encyclopædia of medicine, surgery, and all the allied "ologies?"

The Lexicon is excellently printed, and is remarkably free from typographical errors.

RADFORD LIBRARY MANCHESTER

The Irish Medical Directory for the year 1882. Dublin: Offices of *The Medical Press and Circular*. London: Baillière, Tindall, and Cox. 1882. 8vo. Pp. 640.

Last year we expressed a regret that the usefulness of the "Irish Medical Directory" should be marred by numerous printer's errors and misprints. We are glad to notice an improvement in this respect, so far as the entries of names are concerned, in the issue for 1882. Nevertheless, there is still much need of revision, and it does not increase one's confidence in the information afforded to find mistakes in the staff of the Mater Misericordiæ Hospital, Sir P. Dun's Hospital, and the Meath Hospital; or to be told that Drs. Freke and Grimshaw are still visiting physicians to Steevens' Hospital. In all these cases, be it noted, replies were apparently received to applications for recent information. However, in other more important particulars, the Directory keeps well abreast of the times. Thus in the present issue are included the regulations of the Royal University of Ireland; the new regulations for the Army Medical Department, the Indian Medical Service, and the Naval Medical Department; the new scheme of Education and Examination of the Royal College of Surgeons in Ireland; the revised Regulations for Registration of Births, Marriages, and Deaths; and recent Acts of Parliament, including the Coroners (Ireland) Act, 1881.

PART III.

HALF-YEARLY REPORTS.

REPORT ON PUBLIC HEALTH.[a]

By C. A. Cameron, M.D.; S.Sc.C., Cambridge; M.K.Q.C.P.I.; Fellow and Professor of Hygiene and Chemistry, Royal College of Surgeons in Ireland; Chief Medical Officer of Health for Dublin; ex-President of the Society of Medical Officers of Health, &c., &c.

ILLNESS CAUSED BY FILTH IN MILK.

A few days before Christmas, 1881, Dr. Philip C. Smyly submitted to me for examination a specimen of milk which he believed to contain a toxic substance of some kind, and for the following reasons:—He had just been called in to see three children who were suffering from severe abdominal pains. He found them in a highly febrile state, with furred tongues and gastric symptoms, such as are usually present in the earlier stages of enteric fever. Their temperature was very high—namely, 104·5° F. The family of which the children were members consisted of two adults and five children. The adults and two of the children were not in the habit of drinking uncooked milk, but this article in a raw state furnished a substantial proportion of the diet of three children—those whom Dr. Smyly found to be so ill. It was stated that no bad odours had been noticed in the house, which was not long built, and was situated in a healthful suburb of Dublin. The sanitary arrangements appeared to be in good order, and were subsequently proved to be so. The children had been healthy until two days before Dr. Smyly was called in to see them. After due consideration of all these facts Dr. Smyly came to the conclusion that the *fons et origo* of the children's illness was the milk which they had been using so liberally.

[a] The author of this Report will be glad to receive any books, pamphlets, or papers relating to hygiene, dietetics, &c. They may be forwarded through the agencies of this Journal.

Having obtained Dr. Smyly's permission to visit his patients I proceeded forthwith to their residence. The children's mother was in attendance on the patients. They were exceedingly ill, and the youngest—a baby about a year old—appeared to be dying. I asked to have the milk in stock shown to me, and it was produced in a shallow dish. Its appearance was remarkable, the cream which had risen to the surface having a deep brown colour, instead of the yellowish-white hue of ordinary cream. I skimmed off a portion of the cream for examination. On interrogating the mother of the patients, and the servant to whom the milk was delivered, they stated that a short time before the children's illness they had noticed a similar brown stratum on that portion of the milk which had been set aside for the evening's supply. On ordinary occasions the milk supplied to the house presented no peculiar features, as I was informed.

Having ascertained the name and address of the vendor of the milk I proceeded at once to his premises, and found him at home. I stated that I had come to inquire into the condition of his dairy-yard, stables, and cows, in order to discover the cause of the extraordinary colour of the milk which had that day been supplied to Mrs. R. He at once became very excited, and protested that he never sold adulterated milk; nevertheless he expressed a desire that I should make a thorough investigation into the state of his premises and live stock. I examined the cows; they appeared to be quite free from any disease likely to affect their milk. There was no pump in the yard, the water used for washing pails, &c., being supplied from a Vartry pipe-water tap. The dairy and its utensils were fairly clean. On pressing the milk-vendor to account for the curious colour of the milk supplied to Mrs. R., he gave the following explanation:—He stated that early in the morning the cows were milked by his nephew, a lad apparently about sixteen years of age. He had no light with him, and omitted to wash the teats of the cows before allowing their milk to flow into the milk-pails. As some of the cows had lain all night in such a way that their udders were in contact with the manure in or close to the channel courses, their teats were covered with filth. The milk-vendor expressed his regret that Mrs. R. had not thrown out the milk when its curious colour had attracted her attention. The colour of the milk was not, however, very striking; it was the deep-brown hue of the cream which it threw up that was remarkable.

The milk which Dr. Smyly handed to me was found to be composed of—

	Per cent.
Water, - - - - -	87·10
Fats, - - - - -	3·56
Other Solids, - - - -	9·34
	100·00

It was, therefore, milk of good quality. If it were adulterated with water one might infer that the latter had been polluted, and these three cases of illness would have, perhaps, been simply an addition to the long list of instances of the transmission of enteric fever through the medium of milk containing infected water. Here, however, the only pollution was cow's manure. On examining the cream which had been taken from the milk, microscopically, cow's hair, minute particles of straw, and *débris* of organic matter, were found in great abundance. There were numerous monads, vibrios, and bacteroid bodies. The odour of the cream was slightly but distinctly unpleasant.

There is little doubt but that in these three cases of illness (none of which terminated fatally) milk was the immediate exciting cause. The disease, though it simulated typhoid fever, was probably not a true form of that complaint. Why a little cow's manure should cause such severe constitutional disturbance it is difficult to understand. Would an infusion of cow-dung in *water* have caused similar symptoms? Probably not. The manure was more or less in a decomposing state when it passed into the milk. The latter is well known to be readily affected by foul air. Milk kept in the neighbourhood of decomposing organic matter soon acquires a disagreeable flavour, and the butter prepared from milk under such circumstances is often found to be inferior, and prone to rapid decomposition. Milk is a very unstable liquid, and septic changes are readily set up in it. I am not a believer in the *pythogenic* theory of typhoid fever, but in the cases above described a disease closely resembling typhoid fever was apparently produced by the presence of decomposing animal matter in the milk drunk by the patients. Perhaps the milk formed merely a *pabulum* for the *materies morbi* which had originated in the decomposing fæcal matter. Murchison believed that under certain, but not as yet ascertained, conditions organic matter, when decomposing, developes spontaneously the virus of enteric fever. Although I do not accept

Murchison's theory, yet I freely confess that Dr. Smyly's cases appear to show that decomposing fæcal matter in milk is capable of producing a disease, to say the least, resembling typhoid fever. But there may be many forms of disease resembling enteric fever which are really distinct from that malady, and which may frequently have sporadic origins. I have already expressed this opinion.[a] On this subject Professor Christian Bäumler, of Freiburg, says[b]—"It is not impossible that what we now cannot but diagnose as 'enteric fever' may yet include several distinct diseases—a view which has also been hinted at by Dr. Grimshaw and by Dr. Cameron." In the cases of the three children above referred to there was no rash and no *sensible* enlargement of the spleen, but neither are there these symptoms in many cases which are undoubtedly typhoid fever. There are many facts recorded which would seem to justify us in assuming that febrile abdominal catarrh of a severe type is sometimes produced by the ingestion of milk and other food containing decomposing matter. That ordinary decomposing matter does not produce disease is evident from the fact that semi-putrid game and mouldy cheese are usually eaten with perfect impunity. It would seem as if, under some exceptional conditions, the genesis of toxic principles occurs, and not unlikely may be the cause of many forms of disease which are treated as true enteric fever.

The consideration of the foregoing cases naturally suggests a few reflections on the subject of the hygiene of the dairy. Under the provisions of the Contagious Diseases (Animals) Prevention Act the local sanitary authorities have power to make regulations for the proper housing of dairy stock and the prevention of the pollution of milk. I am not aware that in any regulations in reference to dairy-yards and dairies there is any provision for the protection of the udder of the cow from filth. It is not usual to have supplies of water and soap available for washing the hands of the men who, in the case of city cows at least, milk these animals. The usual practice is to wash the teats of the cow with a little of her own milk! Everyone will admit that it is desirable, to say the least, that before the process of milking is commenced both the hands of the operator and the teats of the cow should be

[a] On an Epidemic of Fever caused by Infected Milk. Dublin Journal of Medical Science, July, 1879. And on Mild and Abortive Typhoid Fever. Ibid., Nov., 1879.

[b] Dublin Journal of Medical Science. Nov., 1880.

washed with water. In the case of cows kept in sheds the animals are milked very early in the morning, after they have lain all night in positions in which it was impossible that their udders could escape contact with excremental matter.

SEVERE ILLNESS CAUSED BY INGESTION OF CAKES AND OF CHEESE.

Early in January, 1882, Dr. Francis X. MacCabe, Inspector of the Local Government Board, submitted to me for examination two gingerbread cakes, which he believed contained some noxious ingredient. It appears that these cakes were the residue of a parcel which had been bought in a small shop in a suburban village. They were partaken of by a young woman and two children, who shortly afterwards became extremely ill with choleraic symptoms. One of the patients suffered from vomiting, one from severe abdominal pains, and all three from diarrhœa.

The gingerbread cakes were examined for ordinary poisons, but none were detected. They were very soft, and had evidently swollen from their original dimensions. Both were in great part covered with minute cryptogamic vegetation, composed of *Penicillium glaucum* and the blue *Ascophora mucor*. On breaking into the cakes several cavities were found in them, which were lined with fungi, most of which were belonging to the species *Ascophora nigricans*, but not a few were of a species which I could not identify. The latter were not any of the ordinary moulds which appear on decomposing bread and similar substances, as their stems were very short and thick, and their spore-cases were much flattened. They were colourless, or nearly so. In addition to the moulds there were numerous bacteroid bodies, as might be expected to be found in a fermenting mass.

The following experiments were made with the cakes:—A portion weighing 9·27 grammes was kept for three hours in the water-bath. It was shortly afterwards given to a mouse, and was soon nearly altogether eaten by the animal. Another portion of the gingerbread which had been similarly treated was given to the mouse, and, being night, was left with it. On the following morning the animal appeared to be quite well. A portion of the cake was, without being heated, given to a mouse. About 9 grammes of the cake were consumed. In a little less than two hours the animal died, its death being preceded by diarrhœa and spasmodic actions.

The poisonous action of mouldy food is proved by numerous

authentic records, but it is doubtful if ordinary moulds, such as, for example, the *aspergillus* or blue mould, are ever injurious. The majority of cheese-eaters prefer that aliment when it is covered with blue mould, which imparts to old cheese a part of its characteristic flavour. Mouldy hay, oats, and other provender are constantly eaten by cattle without apparent injury, whilst in rare cases mouldy food produces severe illness, and even death, when consumed by animals. It is probable that amongst the ordinary fungi which appear in decaying food, and which do no harm, there are occasionally moulds or other low forms of life—animal or vegetable—which are highly poisonous.

The following cases of poisoning by cheese are probably due to the presence of noxious fungi:—In the *Annales d'Hygiène* for March, 1881, Glaesel J. Holm states that a man and his children who had partaken of butter and cheese in the evening became very ill during the night. The father awoke, four hours after he had taken his meal, with violent headache; vomiting and diarrhœa followed, and continued during the whole night and the following morning. On rising, the patient felt giddy, and experienced violent pains in the frontal regions. The diarrhœa ceased early in the day. The children—four in number—had suffered from the same symptoms as their father during the night, and three of them were affected with diarrhœa all the following day. The youngest child, aged three years, did not vomit; he cried all night, and died early on the following day.

The result of a *post mortem* examination showed that there was extravasated blood in the lungs, which were slightly congested; they decrepitated. The left ventricle of the heart contained liquid blood; the right auricle and the two left cavities contained numerous soft and recent clots. The stomach and other abdominal viscera did not present any abnormal appearances which would account for death.

The mother of these children, who had not partaken of the cheese, remained in her usual health.

The cheese, which was at once suspected to have caused the child's death and the illness of his relatives, had a greasy texture, a yellowish hue, and an intensely rancid odour—combined characteristics which must always be regarded with suspicion.

It is remarkable that animals to whom portions of this cheese was given did not appear to suffer any injury therefrom. M. Holm, however, says that no conclusion is to be derived from this

fact, as the action of rancid cheese upon the lower animals is unknown. As a rule, the substances that prove poisonous to man are also noxious to the lower animals, though there are some exceptions to the rule.

M. Holm gives another instance (which occurred in 1870) of the poisonous effects of the ingestion of rancid cheese upon a man and his two sons. They suffered from severe vomitings and diarrhœa and abdominal pain.

It is, perhaps, some chemical products of putrefaction and not fungi which cause rancid cheese to be noxious, for cheese is often in a putrescent state and remarkably free from moulds, whilst, on the contrary, mouldy cheese is often free from decided rancidity.

INJURIES OCCURRING TO DYERS BY USING POTASSIUM BICHROMATE.

In the *Annales d'Hygiène* for January, 1881, M. Mosqueron publishes a long article on the injuries to which the workers with bichromate of potassium are subject. They are as follows:—

1st. Ulcerations of a peculiar kind, having a tendency to burrow, and which are generally situated on the back of the hands and the level of the metacarpo-phalangeal articulations; 2nd. Vesicular eruptions, similar to those produced by the application of croton oil, on all the unprotected portions of the body; 3rd. Acute coryza with conjunctivitis.

The author did not notice any of the other lesions which Delpech and Hillairet observed in the case of the makers of potassium bichromate. M. Mosqueron is of opinion that dyers should be subject to inspection by the sanitary authorities and that the question of the employment of poisonous dyes is one which should be considered by hygienic councils.

GREEN OYSTERS.

Dr. Gaillard, in the *Annales d'Hygiène* for March, 1881, states that oysters acquire by confinement and other conditions a green colour, which is probably due to a disease of their livers. This diseased state appears to cause an increase in their adipose tissue, and consequently of their succulence. These green oysters command a high price. A green colour can be imparted to the mollusca artificially by dipping them in solutions of copper salts. In a dozen of oysters coloured by this method, chemical analysis demonstrated the presence of 0·147 grain of metallic copper—a quantity capable of exciting vomiting and other pertur-

bations. Persons who had eaten only seven of these artificially coloured oysters felt unwell. To those familiar with chemical analysis the detection of copper is an easy process. The author suggests the washing of the oysters by solution of acetic acid and the dipping of a needle into the washings. If copper be present it will be deposited upon the needle.

LEAD-POISONING AMONGST WORKMEN.

An interesting article in reference to lead-poisoning is given in *Annales d'Hygiène* for August, 1881, by M. A. Gautier. About 550 workmen suffer from lead-poisoning yearly in Paris, five of whom die from its effects. Of these patients the house painters and colour manufacturers give a yearly total of 235. The workmen sent by the white-lead and red-lead works are about 195, or a total of 430 patients out of these two classes of men who daily manipulate plumbic preparations. Next come in decreasing orders type polishers, the casters of lead and its alloys, plumbers, mirror silverers, printers, gilders, tinkers and stokers, potters, stokers, &c.

The following table gives the details of cases of saturnine poisoning, carefully collected from the books of the *Assistance Publique* in Paris for the last five years:—

Trades	1876	1877	1878	1879	1880	Annual Average
Painters, &c., - - -	244	290	267	159	213	235·0
Manufacturers of white lead, -	195	164	144	239	232	195·0
Type polishers, - - -	14	21	12	12	6	13 0
Plumbers, - - - -	19	15	17	7	5	12·5
Casters of lead and alloys, type casters, tin vessel makers, -	20	13	11	7	15	13·0
Tinkers and silverers, - -	5	12	3	9	3	6·4
Printers, - - - -	5	11	5	3	4	5·6
Gilders, - - - -	5	11	4	2	2	4·8
Potters (earth vessels), - -	4	—	5	8	5	4·4
Braziers and Stokers, - -	3	9	8	1	—	2·4
Forty-seven other callings, - -	115	78	33	21	36	1·20
Annual Total, - -	634	624	513	467	522	55·2

The white-lead manufacturers and painters number 76 per cent. of the saturnine patients, but unfortunately the great difficulty is to determine the number of cases per 100 workmen following these categories, owing to the impossibility of ascertaining the number of individuals employed in any particular trade; yet from inquiries made at the Prefecture de Police (Public Hygiene Office), statistics supplied by the trade societies, the number of workmen who handle lead and its compounds in Paris are—

House painters, - - - -	14,000
Type polishers (400 women), - -	700
Printers, - - - -	4,000
Tinmen, - - - -	9,000
White and red-lead makers, - -	120

Without entering into any hypothesis or theory as to the mode of introduction of the lead into the system, it may be seen from the foregoing table that those who suffer most from saturnine poisoning are those who are most exposed by their work to the lead dusts which they absorb through the skin, by the mouth, and by the respiratory organs; next come the workmen whose hands and skin come into direct contact with lead preparations mixed with oil or water; lastly, those exposed simply to metallic lead itself or its alloys. It is demonstrable by figures that the absorption of lead dusts through the skin and mucous membranes proceeding from white-lead manufacture is infinitely more fatal than the direct contact of the hands and arms with the same substances mixed with their divers menstrua.

There are in Paris and Clichy two manufactories of white lead of the same importance, which give work to 45 workmen. The first has sent to the Paris hospitals during the last four years an average of 11 patients suffering from lead-poisoning, the second 179. Two chief causes can be assigned for the great difference. In the first the white lead is always manipulated damp or mixed with oil; in the second the lead plates, covered with white lead, are scraped in the dry state, and the lead carbonate is powdered in the course of manufacture, as will be examined further on. Hence abundant dusts are infinitely more dangerous than the direct contact of the hands and arms with those substances when moistened with water or oil—contact to which are compelled by the workmen of the Clichy manufactory. Another cause of the insalubrity of the Clichy works, which accounts for the enormous number of victims

(40 per cent.), is that oxides of lead are also manufactured there. To this dangerous branch of manufacture could be assigned the enormous disproportion of sufferers. But notwithstanding that this observation of the extreme danger of the manufacture and manipulation of the powders of lead oxide in the dry state is an argument in favour of M. Gautier's theory, it is further strengthened by comparing the state of affairs in these works with what takes place at the Portillon works, near Tours, where white lead, minium, and massicot are manufactured. At Portillon 10 per cent. of the workmen on an average are admitted to the hospital yearly; at Clichy 40 per cent. But at Portillon the Thénard process is in force for the manufacture of white lead. This process never allows the product to become dry, while at Clichy it is made by the Dutch process, and collected, beaten, and ground in the dry state, with emission of abundant dust.

Another Parisian industry of minor importance affords another proof of the danger of the absorption of dry dusts of plumbic origin, and that it is always greater than the direct contact of white lead in its different menstrua of metallic lead or its preparations. There are in Paris two little industries for recovering the block tin which has been employed for divers purposes, especially preserve boxes. The boxes are piled up with wood-shavings and saw-dust, and set on fire. The solder melts, and is partly oxidised; the plates are withdrawn before the temperature is too high. The plumbic dusts mixed with the ashes are afterwards cast to the winds. It is especially at this time of the operation that the workmen absorb the lead oxide and are affected. While the plumbers, tinkers, and tinmen (who number in Paris more than 10,000) have only furnished an average of 6 cases to the hospitals yearly; while the 14,000 painters have sent only 250, or 18 per 1,000, the men M. Gautier speaks of, and of whom there are only 14 or 15 in Paris, have had 4 cases in 1876, 3 in 1877, or 280 per 1,000—so great is the danger of lead in the state of dry dust. Statistics, therefore, show, without any preconceived ideas, that the causes of lead-poisoning are in decreasing order of intensity:—

1. Absorption by the skin and mucous membrane of dry lead dusts.

2. Absorption by direct contact with the skin of lead salts in solution, or suspended in water or oils.

3. Contact direct and frequent of lead and its alloys with the unprotected skin.

I. *Causes of Insalubrity in the Manufacture of White Lead.*—Accurate statistics of lead-poisoning in white-lead works in France show 22 per cent. of admissions to hospital, excluding those from the Clichy manufactory. From the Clichy works we find an average of the first eight years, 45·1 per cent. It is evident from these facts that statistics show clearly that the causes of insalubrity must be accumulated at the Clichy works. Here and in the Paris works the Dutch process is employed, but in Clichy the lead plates covered with white lead are taken directly from the heap to the workshop, where the white lead is detached. The workman hammers the plates till all the carbonate is separated, and as this operation is performed in the dry state a large quantity of dust flies about and is absorbed by him. In the Paris works cited above the way of proceeding in this operation is widely different. The moment the plates are removed from the heap they are plunged in tanks full of water, and brought to the workshop, and beaten while yet thoroughly hot, so that no dust can be formed; and though the workmen have their hands and arms constantly in contact with water full of lead salts, either in suspension or solution, yet the accidents are comparatively of rare occurrence. At Lille a far better process is employed. The temperature of the heap at the time of withdrawal of the plates is about 75° cent. Before touching it it is well sprinkled with water, without flooding it. The sudden change of temperature causes the white lead to split, and to be nearly detached from the plates owing to the different coefficient of dilatation of the lead and its salt. They are dipped in water and brought to the workshop, where a slight blow of the mallet or a simple torsion of the bar causes the white lead to fall into a tub of water, to be thence sent to the pounding department.

In other places the scraping is done by machinery and in iron vessels; but these appliances have been given up, or at least require improvement. Besides, they perform the work in the dry state, and no matter what precaution is used they let a large quantity of dust escape.

This process of white-lead manufacture, which is the most dangerous, can be rendered less so by working always on wet material. All danger would disappear if, by first loosening the lead carbonate by the Lille process, it could be subsequently detached by machinery in the white state, or, still better, under water. Next, the carbonate scales detached from the lead plates are to be pounded. This is performed by means of a series of millstones,

set in motion by steam power, which pulverise the substance under water. Subsequently the white lead is put to dry, either in canvas, where it is pressed by hydraulic pressure, or in filters, where it is allowed to drain; then it is treated in different ways, according as the manufacturer has to deliver it mixed up in oil or in dry powder. In the second case it is put to dry in hot ovens or porous pots, then carried to the mill. This new series of operations is to be much dreaded. The manipulation of this dry powder cannot be effected without filling up the air with impalpable dust. With the exception of a few industries, such as porcelain, pottery, enamelling of paper, water-colours, &c., the powdered white lead is never used without being first thoroughly mixed with oil. It is only by routine that painters and oil-paint manufacturers ask for white lead in the dry state, to mix it up afterwards by hand with drying oil. This is a twofold danger—1st, in the works, for the man who has to manufacture and crush the dry white lead; next, for the painter, who must in the workshop mix up with oil this powder, which has become the more dangerous that it is more impalpable. When the white lead is to be mixed with oil at the works it does not require to be thoroughly dried, as the oil has an affinity for white lead, and the water ultimately separates, so that the workman never comes into contact with the dried stuff.

II. *Massicot and Minium Manufacture.*—The manufacture of lead oxides, known as massicot and minium, is attended with the same danger as white lead; and from M. Laget's (of Bordeaux) experiments it is shown that the absorption of minium is more dangerous than the absorption of white lead itself (*Gazette Hebdomadaire de Bordeaux*, 16 Oct., 1880, p. 334).

The precautions to adopt in factories where the lead oxides are produced are—

1. To effect the mixing up of the lead during the oxidation in the reverbatory furnaces by means of machinery, as at Portillon, Bordeaux, and Clichy.

2. To have the furnaces in the open air, and provided with two doors—one for the introduction of the lead and the other for the exit of the product, and directly in front of the first, so that when withdrawing the products the workman may push it on instead of drawing it towards himself.

3. To get the massicot and minium to fall from the furnace into wheelbarrows or tanks full of water, themselves enclosed in

air-tight compartments made of sheet iron, so as to prevent the spreading of the plumbic dusts in the workshops.

4. To effect all pounding and sifting in rooms hermetically closed, and not to allow anyone into these rooms, the walls of which must be so disposed as to allow the oxides to fall automatically into the packing department.

5. To pack up mechanically the lead oxides under a funnel provided with a strong aspirator, and if necessary to throw down the dusts round the barrels by means of an intermittent water spray.

6. To wash the workshops, woodworks, beams, walls, floors, &c., each week by means of a fire-engine, and carry away all the dusts, which being deposited on all projections get mixed with the air owing to the vibrations produced by the machinery.

By adopting these precautions, and a few others described further on, the danger attending the manufacture of lead oxides almost disappears, while these industries, as they are carried on at the present moment, are so unhealthy that a man cannot work more than a week without getting an attack of lead-poisoning.

III. *General Precautions to be enjoined on Workmen of White Lead and Minium Factories.*—In well appointed factories of Lille, Tours, and Paris, the workmen find outside the workshops tubs full of a weak solution of sulphate of sodium, or calcium, and buckets of argillaceous sand. They dip their hands and forearms in the sulphide solution, then get rid of the oxides, the white lead, and the sulphide itself, by rubbing themselves with the sand, after which they wash themselves thoroughly in running water. The washing of the naked parts of the body is most important. The clothes also require great attention. The men should be provided with a large linen garment, to wear only during working hours, and to be cleansed during their absence. If to this be added frequent sulphurous baths and strict medical supervision, the hygienic conditions affecting the workmen will be vastly improved, if not perfected.

Lead-poisoning in painters is chiefly due, as in case of white-lead makers, to dust. The causes of absorption are in a decreasing order :—

1. The rubbing with sand-paper of old or new paints and coatings.

2. The scraping and blistering of old oil paints.

3. The pounding of colours and their sifting.

4. The absorption through the skin of white lead used as paint or coating.

No practical means can be devised to mitigate the first of these dangers. The second can be avoided by using an alkaline solution before scraping, and giving up the blistering, which is most dangerous; but in this case all contact of the hand with the paint should be carefully avoided, as the salts of lead, then in solution, are most dangerous. The remedy for the third has been already answered above by having the colours mixed at the factories. As to the fourth, attention given to the cleanliness of the handles of the brushes will palliate the danger of absorption through the skin, as is proved by the fact that Germans, Belgians, and Swiss, who do not pay the same attention to personal cleanliness as the French workmen do, are much more subject to that kind of poisoning. Lastly, to use, when possible, substitutes for white lead, such as sulphide of zinc as manufactured in Liverpool. This paint, according to the reports of the International Congress of 1878,[a] covers one-fourth more surface than the best white lead, and is about the same price.

IV. *Prophylactic Measures.*—In order to prevent saturnine-poisoning the following prophylaxis has been proposed:—The daily use of milk, of aperients, of sulphurous baths, of sulphuric acid lemonade, of iodide of potassium, and salted food. Milk seems to have given very satisfactory results, but for obvious reasons it should not be used at the factory. Sulphuric acid lemonade has fallen into disuse, as it is believed to be ineffective; besides, the sulphate of lead that is intended to be formed in the system by this means, and which is insoluble in water, has been shown by Professor Melsens, of Brussels, to be poisonous to animals.

There is the clearest evidence that the use of iodide of potassium favours the elimination of lead by the urine, perspiration, and sweat. Sea salt acts similarly but less efficaciously. Iodide of potassium used without great circumspection is likely to produce iodism. If used constantly, too, its eliminative action on lead ceases, so that its employment must be periodically suspended. These facts show that the use of iodide of potassium must be prescribed by medical men. In France, in the best regulated factories, weekly medical inspections of the workmen are made, and, the first symptoms of lead-poisoning being perceived, stringent

[a] Compte Rendu Ethnographique. Vol. I., p. 636.

prophylaxis is at once put in force. Those persons who are easily affected by lead are forced to seek some other kind of employment.

In conclusion the author states that saturnine-poisoning can be enormously lessened by abandoning the use of powdered white lead by the substitution of sulphide of zinc for white lead; by temperance on the part of the workmen, by the free ingestion of milk, honey, and salted meat, by thorough cleanliness, and by not allowing persons unduly disposed to lead-poisoning to work in white-lead factories. This prophylaxis, of course, applies to workers of every kind exposed to lead-poisoning.

LONGEVITY IN EUROPE.

The last censuses of the population taken in Europe have furnished to the director of the administrative statistics of Austria the opportunity to make an interesting study of the longevity of European populations. It appears from his researches that of 102,831 individuals who have gone beyond ninety years of age, and whose existence has been ascertained in the great States, there are 60,303 women and 42,525 men. The great longevity of the female sex shows itself in a more tangible manner in the number of human beings who attained, or even passed, five score. In Italy, for instance, 241 centenarian women were found as against 141 men; In Austria, 229 women as against 183 men; in Hungary, 526 women as against 524 men, &c. In Austria the number of sexagenarians is 1,508,359, or 7·5 per cent. of the population.[a]

PROCESS TO RENDER MAGNESIAN AND SULPHATE OF LIME WATER DRINKABLE.

E. Strohl and E. Bernou have an article on the softening of magnesian waters in the *Annales d'Hygiène* for December, 1881. Waters rich in magnesian salts possess laxative properties which render them unfit for drinking purposes. They generally also contain a large proportion of lime salts—and some authors hold that these salts, when taken in excess, predispose to cancer, scrofula, and hypertrophies. When the proportion of magnesian salts reaches from 0·15 to 0·2 gram per litre, they are considered to be mineral waters. The addition of sodium carbonate to these waters causes the magnesia to be replaced by soda. Waters so treated are not thereby rendered drinkable, sodium salts exercising a purgative action on the system almost as strong as the corres-

[a] Annales d'Hygiène Publique. Jan., 1881.

ponding magnesian salts; the removal of the latter only renders the water fit for culinary purposes.

M. Strohl and M. Bernou propose to solve this problem:—

1st. To treat the water kept in a reservoir with milk of lime. After twenty-four hours the magnesia is completely precipitated.

2nd. To add to the water so modified carbonate of barium finely pulverised, to stir frequently, and allow the mixture to settle. The whole of the sulphate of calcium is precipitated after twenty-four hours.

A German chemist, Reinsch, has already used carbonate of barium with success to purify waters which contain sulphate of calcium; the cost is very trifling. The water must be filtered to free it from the barium carbonate, which might dissolve in the stomach. This process appears to be open to objection on account of the poisonous properties of barium salts.

ALTERATIONS IN THE PULMONARY ORGANS BY EXPOSURE TO THE AIR IN GAS PURIFICATION ROOMS.

An interesting article on the above subject appears in the *Annales d'Hygiène* for May, 1881, from the pen of M. Poincare.

The pathological changes produced by habitually breathing the air of the rooms in which coal gas is purified have not been as yet much investigated. The workmen engaged in the process of gas purification succumb to so many forms of disease—many of them dying years after they have ceased to be employed in gas works, and under circumstances which render autopsies impossible. Even when death takes place in hospital, it is usually the immediate and not the remote cause of death which is inquired into. The author kept guinea-pigs in the purification chambers from four to eight months; some of the animals were exposed to the air impurities of the chambers more than others. Another batch of guinea-pigs were submitted to the influence of variable mixtures of purified coal gas and air. Sometimes there was a short interval, sometimes a long one, between the exposure of the animal to the mixture and its inspiration of pure air. In some experiments the gas was passed through solutions containing chloride of copper and ammonia, or hydrochloric acid, and intended to remove from the gas its carbon oxide. In other experiments the gas was passed through sulphuric acid to retain its ammonia and through potash to arrest its hydrochloric acid. The animals were subjected to the mixture of gas and air only during the daytime.

ST MARY'S HOSPITAL RADFORD LIBRARY MANCHESTER

The air in the purification room exercises upon the lungs of the guinea-pigs an irritative action, slow in progress, but acquiring in a few months great intensity. No striking symptoms attend this irritative action—there is no rise of temperature, no loss of appetite, no dyspnœa, no diminution of muscular activity. The modifications in the lungs appear to be simply anatomical, and even to yield no results to microscopic scrutiny. They consist in an accumulation of epithelial cells and a prodigious proliferation of nuclei in connective tissue. Sometimes the nuclei form diffuse tracts, sometimes they are aggregated in globular masses, which, by pressure, form small fibrinous capsules, resembling meningitic granulations in children.

The author has yet to ascertain whether or not these small masses would in progress of time pass into cheesy deposits or give rise to suppuration. He thinks, however, that it may be dangerous to expose children to the air of the purifying rooms as a remedy for whooping-cough.

A guinea-pig was, during the whole period of gestation, kept in the purification room; her offspring was, therefore, owing to exchange of blood between mother and fœtus, subjected to the influence of the impure air. The latter for a few hours after birth was kept in the chamber and then died. Spectroscopic examination of its blood showed the presence of carbon monoxide in large quantity. The lungs were found to be anatomically sound, proving that the action of the poisonous air of the chamber had only taken place during the short extra-uterine existence of the animal.

Gas, as delivered for consumption, is not quite free from the poisonous substances which exist in the purification room, for it was found to produce in guinea-pigs the peculiar lung alterations above described. Of course the partly purified gas is very much less energetic in its action. Carbon monoxide (carbonic oxide) is not the sole cause of the poisonous effects of coal gas, since in some animals injuriously affected by coal gas their blood was found free from carbon monoxide.

ON THE PRESENCE OF TRICHINA SPIRALIS IN ADIPOSE TISSUE.

M. J. Chatin states (*Bulletin of the Academy of Sciences of France* for 21st March, 1881) that he has discovered trichinæ in fat. Small portions of lard, detached from salted pork, were cut into thin slices and examined microscopically. They were found

to contain trichinæ, not encysted, and not different from ordinary trichinæ. Lard was dissolved in bisulphide of carbon and ether, and the solutions evaporated. The residue contained trichinæ, some of which were encysted. Animals fed with the fat of a pig containing trichinæ did not exhibit any morbid symptoms, whilst the muscular fibre taken from the animal produced fatal results to four animals fed upon it. Trichiniferous lard is, therefore, not a virulent poison, probably because it does not contain many of the trichinæ. At the same time it is important to know that adipose tissue may contain trichinæ, the reverse being the general opinion up to the present.

THE AIR OF PARIS (MIQUEL'S ANNUAIRE DE L'OBSERVÂTOIRE DE PARIS, 1881).

One cubic metre of the external air in Paris contains on the average 30,000 mouldy spores. These may attain the number of 200,000 during the damp heat of summer, and come down to 1,000 in winter, when the atmosphere is cold, calm, and recently cleared by rain or snow.

In the park of Montsouris the air is five or six times purer than in the centre of Paris; and the atmosphere of hospital wards, the most scrupulously clean, is five or six times more impure than the damp atmosphere of the sewers.

CARBONATE OF AMMONIA IN INFLAMMATION OF THE LUNGS.

Dr. King states that carbonate of ammonia is a very useful drug during the second stage, or period of hepatisation, in pneumonia. It appears to be most serviceable when the disease is approaching the stage of resolution, when it is desired to deprive the blood and air-cells of their excess of fibrin, and to stimulate the sound lung until resolution has become well established and the crisis has passed. The objection to the drug on account of its acrid, pungent, and penetrating smell and taste is obviated by dissolving it in a simple syrup, or according to the following formula:—℞. Carbonate of ammonia, ʒj.; Syrup of tolu, ℥iss. M. Sig. A teaspoonful every half hour or hour, in simple syrup, whisky, or water, as the case demands or the patient prefers. The dose need not be limited to five grains, but it may be safely administered in ten or fifteen grain doses every half hour for days and nights in succession, and it will not then even act as a gastric irritant.—*The American Practitioner*, March, 1881, and *The Practitioner*, January, 1882.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE COLLEGE OF PHYSICIANS.

SESSION 1881-82.

GEORGE JOHNSTON, M.D., President.
ALEXANDER NIXON MONTGOMERY, M.K.Q.C.P., Honorary Secretary.

Wednesday, January 4, 1882.

J. W. MOORE, M.D., Vice-President, in the Chair.

The late Dr. Reuben J. Harvey.

DR. A. NIXON MONTGOMERY, Honorary Secretary, read the following Resolution, which had been unanimously adopted at a meeting of the Council held on the 29th December:—

Proposed by DR. C. J. NIXON, seconded by DR. HAWTREY BENSON: "That the Council of the Medical Society of the King and Queen's College of Physicians, Ireland, desire to place on record their profound regret at the death of Dr. Reuben Harvey, a Member of Council, and their sense of the loss which the Dublin School of Medicine has sustained by his demise; and that a copy of this Resolution be submitted by the Honorary Secretary at the next meeting of the Society."

DR. NIXON, in moving the adoption of a resolution similar to the foregoing, said he hardly thought it necessary to dwell at length on the demise of Dr. Harvey. The suddenness of the event had to himself, and he believed to most of the members of the Society, given a most painful shock, and one that would not readily pass away. That might explain the unusual course which had been taken by the Council in adopting a resolution, and then submitting it to the members of the Society. No member of their profession had passed away evoking a more heartfelt and genuine feeling of regret than their lamented friend.

They all admired his industry, ability, and originality; his great force of character, his strict integrity, and his unobtrusive spirit of independence enforced their respect, while his bright, cheery manner and genial disposition endeared him to all who knew him. It was not too much to say that great as was the loss which the Dublin scientific School of Medicine had sustained by the death of one of its most promising members, still greater was the loss sustained by those who had been brought into close contact with him through the absence of the bright and sterling example which he had set of earnestness and devotion in fulfilling his short *rôle* here below. Death had had many spoils of late amongst us. Neither the young nor those laden with years and honours had been spared—*mors omnibus communis*—but no one had left a name more honoured or beloved than Reuben Harvey.

Dr. Fitzgerald, in seconding the resolution, said he had but little to add to the observations already made. They all felt that they had lost an able and accomplished colleague, and a sincere and loving friend.

The Chairman, in putting the resolution, said he could not trust himself to add anything to the words of Dr. Nixon and Dr. Fitzgerald.

The resolution was passed in silence.

Dr. Nixon moved—"That out of respect to the memory of the late Dr. Reuben Harvey, this meeting be adjourned until this night week, the 11th instant."

Dr. Henry Kennedy seconded the resolution, which was unanimously agreed to.

The Society then adjourned to the 11th instant.

Adjourned Meeting, Wednesday, January 11th, 1882.

J. W. Moore, M.D., Vice-President, in the Chair.

Brigade-Surgeon Jackson, C.B., having taken the Chair,

The Vice-President read the following paper:—

An Outbreak of Disease traceable to the drinking of Impure Water. By J. W. Moore, M.D., Dubl.; Vice-President and Fellow, K.Q.C.P.; Physician to the Meath Hospital and to Cork-street Fever Hospital.

The accepted ætiology of typhoid or enteric fever places this form of specific continued fever in intimate relation to certain forms of gastro-enteric catarrh on the one hand and to a specific variety of inflammation of the lungs—pythogenic pneumonia—on the other. And here I would at once avow myself an advocate of the theory of the *dual* nature of the exciting cause of typhoid fever. The disease is no doubt in many instances due to contagion, or—in the more cautious words of Murchison—"is *communicable* in a limited degree," but there is every reason to believe with the

same great writer that it may arise *de novo* from the decomposition of sewage matter. For more than thirty years Prof. F. von Gietl, of Munich, taught that the poison of typhoid fever, although contained in sewage, is always derived from the excreta of an individual already suffering from the disease, a drain being merely the vehicle for its propagation, or, in fact, "a direct continuation of the diseased intestine."[a] This view was adopted and promulgated by Dr. William Budd, of Bristol.[b] But surely it is more philosophical, with Murchison, not to admit as a necessary sequence that because the disease may be sometimes communicated by the sick, in every case where it is traceable to bad drainage the poison in the drain has of necessity been derived from a person previously infected with the disease.[c]

If, in a given instance, not only true typhoid fever, but other diseases are so clearly traced to sewage-poisoning as to establish the relation of cause and effect, are we not justified in arguing that the specific virus of typhoid fever has been generated *de novo* either outside or within the bodies of those who have developed the symptoms of this disease, rather than that the said specific virus is capable of producing true typhoid fever in one individual, and—let us say—a form of pneumonia in another?

The outbreak of disease which I am about to describe is a case in point.

From a large educational training institution in Dublin two cases of typhoid fever were admitted in the "fall" or autumn of 1880 to the wards of the Meath Hospital. No special attention was unfortunately drawn at the time to this precursor of an epidemic. During the following winter and spring there were no other attacks, but on the 1st of October, 1881, a young man aged nineteen, a pupil-teacher in the same institution, was admitted to the Meath Hospital under my care on the recommendation of Sir George B. Owens, who had carefully attended him for some days in the earlier part of his illness. Messrs. F. T. P. Newell and Travers Smith took charge of the patient, and the following is an abstract of the clinical notes taken by these gentlemen:—

Case I.—Jonathan C., aged nineteen, unmarried, a pupil-teacher, admitted October 1, 1881. Eight days previously he complained of cold, or a chilliness, and headache with nausea and a dry retching. He lost his appetite, and spent most of his time in bed. His temperature on the morning of his admission (eighth or ninth day) was 101°, his pulse was 93, and the respirations were 24. In the evening the temperature rose to 102°, the pulse to 96, and the respirations to 27. On

[a] Murchison. The Continued Fevers of Great Britain. Second Edition. 1873. P. 483.

[b] Typhoid Fever: its Nature, mode of Spreading, and Prevention. London: Longmans, Green, and Co. 1873.

[c] Loc. cit. P. 483.

the evening of October 2 the temperature reached the highest point attained during his illness—namely, 103·2°; during the subsequent days it ranged generally between 101° and 102·5°. On October 5th rose spots were observed on his abdomen. They continued to appear in successive crops until October 16, when they ceased to come out. There were never more than four or five visible at the same time. On October 10 the patient pronounced himself to be much more comfortable than at any time since his admission. The headache and all other unpleasant sensations had left him, and his general aspect was not such indeed as would indicate serious disease; his face was bright and rosy, and his tongue was almost perfectly clean; his brain was quite clear, and he was always ready to enter into conversation with those who attended him even after having been suddenly wakened in the middle of the night. Towards the end of the third week, however, his face became pale and his tongue furred, but no aggravating symptoms accompanied this apparent deviation from the uniform mild course of the fever; neither the temperature nor the pulse rose, and his appetite, which at this stage was remarkably good, remained unaltered. A few days later his tongue cleaned again, but his face remained pale. He continued to improve until October 23, when he was allowed to sit up for the first time, and he left hospital on October 30. The fever ran a mild course of about four weeks, and was uncomplicated. At no time had he diarrhœa to any great extent—that is, exceeding three motions daily, but the discharges had the characteristic ochrey colour of typhoid stools.

The second case is also one of undoubted typhoid fever, as will appear from the clinical history, which is as follows:—

Case II.—On Friday, October 28, 1881, Frances O., teacher, was admitted under my care from the same institution, Mr. P. M. Skipworth taking charge of the case. She stated that on Thursday, October 20, she was obliged to leave her class owing to a severe headache, which became worse in the evening; she went to bed early, but was hot and restless throughout the night. On getting up next morning she felt poorly, and did not go out that day, but stayed indoors reading, and went to bed early in the evening also. On Friday she attended her class. She now lost her appetite. Next day she again attended classes, but stayed indoors all day. At this time her bowels were confined, for which she took a pill. On Sunday morning she got up with a sore throat, and for this her neck was poulticed. No appetite at all. That night she felt very feverish. On Monday Sir George Owens saw her, and gave her a diaphoretic mixture. On Tuesday spots appeared on the face and neck, which became vesicular where the poultice had been applied. At this period a slight diarrhœa set in (but this did not recur). She had menstruated a fortnight or three weeks before admission. Her

throat gradually got better, but she still felt sick and feverish. She was admitted on the seventh day of her illness, the temperature being 103°, pulse 104, and respirations 30. She was put on arseniate of iron and sulphate of iron in pills. The diagnosis of typhoid fever was made from the history of the case, and from the fact that there was some gastro-intestinal disturbance, with splenic enlargement. The tongue was thickly furred, and the papillæ were enlarged. Since her admission her temperature was as high as 103° on only two occasions; the pulse ranged from 90 to 120, and the respirations from 24 to 32 in the minute. The sequel of this case is a very sad one. At the beginning of the fourth week the evening exacerbations of fever became decided, the patient wasted gradually, until at last she was reduced to mere skin and bone; her voice failed, and her strength ebbed away. With the view of giving her change of air, she was moved one day to another ward, but the exertion proved too much for her, and she passed into a state of insensibility, with choreiform movements of the limbs and dilatation of the pupils. There was apparently œdema of the brain and effusion into the ventricles. After forty-eight hours of anxious watching, her senses returned, but a gradually extending hypostatic congestion of the lungs, aggravated by the cold weather then prevalent, at last caused her death on Tuesday, December 21, on the sixty-fourth day of her illness. No *post mortem* examination was made.

The next two cases are particularly interesting and instructive, because both patients were sent into hospital, from the Training School, under the impression that they also were suffering from typhoid fever. But the event proved otherwise :—

Case III.—Mary Jane M., student teacher, aged eighteen, was admitted to the Meath Hospital on Monday, 7th Nov., 1881, suffering from what was at first thought to be typhoid fever. For the notes of this case I am indebted to Mr. A. J. Boyd.

Her illness commenced on Friday, Nov. 4th, with a headache and a feeling of chilliness. On the following day she lost her appetite, but did not feel sick. There was no diarrhœa, but the bowels were free. On Sunday she complained of a pain in the pit of the stomach, and of a nasty taste in her mouth.

She had menstruated a few days before her illness commenced.

On Monday, Nov. 7th, the evening observations were—Pulse, 92; respirations, 22; temperature, 99·6°.

On Tuesday the observations were—in the morning—Pulse, 96; respirations, 26; motions, 0; temperature, 99·8°; in the evening—Pulse, 88; respirations, 24; temperature, 99·2°. On physical examination slight splenic enlargement was observed.

Nov. 9th.—Morning—Pulse, 82; respirations, 24; motions, 1; tem-

perature, 98·4°. Evening—Pulse, 80; respirations, 24; temperature, 97·6°. From this on the temperatures, &c., were normal or slightly below 98·4°. On Nov. 12th the bowels, being constipated, were freed by 60 grains of compound liquorice powder.

Nov. 17th.—Tongue was furred, with enlarged papillæ.

Nov. 18th.—She appeared quite well, so that she was sent to the Convalescent Home next day.

Case IV.—(From notes taken by Mr. Hawthorne).—Jane C., aged eighteen, by occupation a student-teacher, was admitted Nov. 15th, 1881, on the seventh day of her illness.

History.—On Hallow Eve night she caught cold coming out of a hot room into the open air. About a week after this she had a severe rigor, and felt very feverish. This was followed by violent vomiting, which commenced on Thursday, 11th Nov., and lasted up to the day of her admission, when it ceased. She had sore throat and cough, for which she had been poulticed over the chest before admission. About six years ago she had diphtheria, and was always subject to colds. Menses regular; was "unwell" on the day she had the rigor. She was admitted into hospital for supposed typhoid fever.

On admission she was feverish, with a furred tongue and quick pulse (116). The temperature in the morning was 102·6°, rising in the evening to 103·4°; pulse 120, and respirations 42.

In the evening she was seen by the clinical clerk, when she complained of cough, slight sore throat, and pain in the left side. He suspected pneumonia, and ordered the nurse to poultice her over the chest.

Nov. 16th.—Dr. Moore examined her this morning, but failed to detect any typhoid symptoms, and confirmed the suspicion of the clinical clerk as to the presence of pneumonia. On physical examination there was no tenderness on pressure in the right iliac fossa, nor was there any splenic enlargement. There was dulness on percussion over the base of the left lung. On auscultation there was tubular breathing in the same locality, with puerile breathing over the front of the chest. Bronchophony well marked. Tongue furred, white, with a little herpes on its left side. There was also an herpetic eruption on the upper lip. Sputum slightly rusty. The temperature fell this morning to 98·4°; pulse, 104, and hard; respirations, 48. She was ordered the following mixture:—

℞. Quiniæ sulphat., gr. 24.
Acid. hydrobromici, ℥iii.
Spt. chloroform., ℥ii.
Aquæ camphoræ, ad ℥viii.

One ounce to be taken three times a day.

ST. MARY'S HOSPITAL RADFORD LIBRARY MANCHESTER

It was arranged that the poultices were to be continued, and that she was to be dry-cupped over the base of the left lung.

In the evening the temperature was 98·6°; pulse, 104; respirations, 52. She complained of slight headache, and pain at the top of the left lung.

Nov. 17th.—The temperature fell to 97·2°; the breathing was still fast and irregular; tubular breathing well marked. She was again dry-cupped.

Nov. 18th.—Morning temperature normal, but in the evening the thermometer rose to 100·2°; pulse, 104; respirations, 40. She was feverish, and complained of sore throat. This rise of temperature may be accounted for by the fact that another patient was received into the ward in the course of the day, and that she felt very nervous in consequence.

Nov. 19th.—Temperature normal. There is still tubular breathing.

Nov. 21st.—Feels better to-day, but complains of pain over the region of the heart. A poultice was ordered to be applied.

Nov. 23rd.—Dr. Moore detected slight "crepitus redux."

Nov. 25th.—Bronchophony very slight; percussion note clearer. Still feels slight pain in left side when she takes a deep breath.

Nov. 27th.—She was allowed up to-day.

Here, then, we have a series of four cases of illness occurring in the same institution within a few weeks, and in every instance the nature of the attack was eminently suggestive of defective sanitary arrangements. Two of the four patients suffered from true typhoid fever; a third suffered from an attack of acute gastro-intestinal catarrh, or—as some may think—from an abortive typhoid; and a fourth from a croupous pneumonia, which, in its origin and course, closely resembled that variety of inflammation of the lung which was called by Laennec "epidemic pneumonia," and in recent times has received the names of "sewer-gas pneumonia" and pythogenic pneumonia.[a]

Let us now see what was the condition of the sanitary arrangements in the Training School. When the outbreak of disease, which I have described, occurred, Dr. Charles A. Cameron, Superintendent Medical Officer of Health for Dublin, was asked to inspect the premises, with the object of discovering the origin of the sickness. With his usual kindness Dr. Cameron has written for me the following report, which I will quote in his own words:—

"*Condition of the Training School.*—The house drains were in a very bad state. When originally laid down the pipe-drains were not brought into proper union by means of cement; many of them were improperly levelled, and in some cases there was an actual open space between pairs

[a] Pythogenic Pneumonia. By Drs. Grimshaw and J. W. Moore. Dublin Journal of Medical Science. 1875. Vol. LIX. Page 399.

of pipes. In the area next the street the drain was choked with foul matter. The pipe leading from the scullery into the area drain was not properly trapped, neither was a pipe which carried water and slops from a sink situated within the house to a drain in the yard, which communicated—without being trapped—with the street sewer.

"The water used for drinking purposes was chiefly taken from a tank situated in the front area, but in a confined place, having a stone roof. The overflow-pipe from this cistern did not pass directly into the drain, but delivered its contents over a grating which communicated with the drain. The latter, however, was in a very bad state, broken and choked with foul matters. It is evident that sewer gases, &c., came up abundantly through the fissures in the area floor, and were dissolved by the water stored in the uncovered cistern. The area was dirty, too, and contained various kinds of refuse which had been blown into it from the street. On examining the water microscopically it was found to contain, in decidedly large numbers, algæ and various kinds of infusoria, especially of monads and rotifers, and several varieties of paramecium. An imperial gallon of the water yielded 0·014 grain of albuminoid ammonia and 0·008 grain of saline ammonia—proportions largely in excess of those found in pure Vartry water, which this water originally was. It is difficult to decide whether the water or the sewer gas was the direct cause of the outbreak, but I am inclined to think that it was the water."

With this report on the condition of the water used for drinking purposes in the Training School before us, we can have no hesitation in agreeing with Dr. Cameron that it was most likely the foul state of the drinking water which gave rise to the sickness—at least in the first three cases. In conclusion, I have only again to direct attention to what, in my opinion, is the most interesting feature connected with the outbreak—namely, that the using of water impregnated with sewer gas probably gave rise to three varieties of disease—true typhoid or pythogenic fever, gastro-enteric catarrh, and pythogenic pneumonia.

The Chairman said there was every reason to believe that impure water was a most fertile source of disease. A few years ago, when he was serving in the Transvaal, a body of the troops with which he was connected were stationed at a place called Fort Weber, which was supplied from two rather deep wells, in which there was probably a sulphurous impregnation. Although there were a number of individuals living in a filthy state, and a number of cattle, he was informed by the medical officer in charge of that body that there was no case of sickness. He was in another place supplied with water which came down from a village. A quantity of sewage from an Indian corn field ran into this stream, and natives washed their clothes in it at a point above the

village. In a short time there were nine or ten cases of sickness among the troops supplied with this water.

Dr. Finny said it was important to record every case in which it was possible to trace the origin of enteric fever. Two views as to its origin chiefly prevailed. One was the pythogenic theory of Murchison, advocated by Dr. Moore, which was that the infection proceeded from decomposed animal and vegetable matter, introduced by means of drinking water. The other view was that the source of the disease was septic matter which had proceeded from a typhoid patient, and infected air, water, or food. Many persons thought that there must be a state of receptivity before the contagion could be received into the body. The late Dr. Stokes pointed out that every person was not equally liable to fever. There was, he (Dr. Finny) believed, a certain period of receptivity with regard to typhoid fever. A person might be a long time exposed to the same exciting causes, but there were only particular conditions of body in which he would take the poison which would produce enteric fever. He believed Dr. Moore was right in tracing the cases of fever to which his paper referred to the foul water and the imperfect sewerage. No doubt gastro-intestinal catarrh or pneumonia might have occurred in a young female going out of a heated room into a cold atmosphere without calling in as a cause insanitation, and he did not think they should necessarily connect the case of pneumonia with the outbreak of typhoid fever; he asked that some good reason should be given for applying to this case the name "pythogenic pneumonia." It appeared to him to be a case of pneumonia of an asthenic type, with a gradual and protracted first stage. At the same time he admitted the epidemic nature of pneumonia, and fully appreciated the term "pythogenic pneumonia," as described some six years ago by Drs. Grimshaw and Moore. On another point he would ask Dr. Moore's opinion. All those cases were extremely mild, and with the exception of the case where there was severe marasmus there was no evidence of great fever-poisoning, considering the terribly insanitary condition of the house where these young people resided. Why was the fever of so mild a nature—especially where it was assumed that there was an epidemic of it? If fever poison be introduced into the body was there any way of telling whether the fever would be of a severe type or not? Did Dr. Moore consider that the absence of profuse diarrhœa was in any way due to the small amount of the fever poison? He said that in one case the stools were never more than three in a day. Was that an evidence of the small quantity of the poison absorbed, or of the mildness of the type of the fever which had prevailed during the last two or three years? His (Dr. Finny's) experience was that in a great many cases diarrhœa was not the rule, but rather that constipation was the prominent symptom.

Dr. Wright said that during 1879 and 1880 there was much typhoid fever in Dalkey. It was confined to a number of single-story cottages on one road, and the cottages had yards, into which refuse matter was thrown, and in which pigs were kept. At the end of 1880 a system of sewerage was introduced into the township and sewers were run up the road, and the inhabitants of these cottages were forced to connect their drains with the main sewer. In 1881 there was not a single case of typhoid fever in that road, although in 1880 there were twenty cases, some of which were genuine typhoid, but a good many others were what he would call febrile gastro-enteric catarrh, accompanied with diarrhœa, but running a shorter course than typhoid, and having no characteristic eruption but a very high temperature. When the fever was bad he suspected that the water was the cause of it. The people living there derived water from two sources. One was a Vartry fountain at the end of the road. The other was a pump which was celebrated from time immemorial for the purity of its water. When the people got the fever they sent to the pump for water. He sent a sample of the pump-water to Dr. Cameron, who pronounced it perfectly pure. In 1880 the three worst cases of typhoid occurred in two cottages at the very top of Dalkey Hill. The people who lived in those cottages got water from a well which was a good deal above the level of the sewerage of their houses, and he was puzzled to find the cause of the fever until he asked where the privy was, and he found that it was close to the houses, and that connected with it was an ashpit from which there was a sickening stench. There was fæcal matter mixed with water, and a terrible smell. He got it roofed in, and, though there were between twelve and fourteen families in those cottages, there was no more fever there from that time. The only case of typhoid fever they had this year in Dalkey was in a cottage which the main sewer did not reach, and which lay lower than the level of the road. He could not find whether there was any drainage to the cottage, or how they disposed of the sewerage.

Dr. Pollock mentioned that about a year and a half ago a young lady, resident in his neighbourhood, the daughter of an officer in the army, got the severest attack of typhoid fever that he had ever seen. She was insensible for ten or fifteen days. The drainage of the house was first examined, and afterwards it turned out that the family had spent the summer in a house at Dalkey. That house was examined, and it was found that the drainage was completely stopped, and that the closet gave off a tremendous quantity of sewer gas. Another young lady in the same house got typhoid fever also.

Dr. Henry Kennedy said it had often struck him that attacks of typhoid fever occurred years after the causes to which they were attributed had been in operation, and were then put down to bad sewerage or bad water, as the case might be. It was very difficult to

understand why persons should be attacked after they had been subject for years to the influence of such causes. His own conviction was that both typhoid and typhus arose within the individual. People succumbed when they got out of health, but that either form of disease was due to bad water or to bad sewerage, to use a Scotch expression, was not proven. He would be slow to set down pneumonia to either bad water or bad sewerage.

Dr. Cranny said the occurrence of epidemics was the answer to Dr. Kennedy's observations. Dr. Moore's cases went to prove that the water supply was the cause of the typhoid fever, but more probably the original source was the sewer air from the decomposing matter in the sewers. Professor Tyndall, in his last work on germs, stated that it was not simply the bad air of drains that caused disease, but that the germs of disease, floating about in the air, found in sewer-gas the most proper nidus in which they could develop, and that it consequently became pestilential.

Dr. Moore, in reply, said that the individuals whose cases he had brought forward were healthy, well-fed, placed in favourable circumstances, lived in a healthy part of the city, and had free open air and exercise. Furthermore, the type of typhoid fever in Dublin had recently been singularly mild. He (Dr. Moore) had called the pneumonia "pythogenic" from the course it took. It was true that the girl came out of a hot room into cold air on a Hallow Eve night, but she did not pass into pneumonia at once. A week elapsed before she got the rigor; there was a period of incubation. Again, the atmospheric conditions under which the attack of pneumonia developed were eminently suggestive of its pythogenic origin. What those conditions were was pointed out in the paper written some years ago by Dr. Grimshaw and himself, already referred to, in the following words:—"Our conclusions are—That whereas ordinary pneumonia is especially prevalent during a continuance of cold, dry weather, with high winds and extreme variations in temperature, pythogenic pneumonia reaches its maximum during tolerably warm weather, accompanied by a dry air, deficient rainfall, a hot sun, and rapid evaporation." With the exception of the last-mentioned, those were exactly the atmospheric conditions that prevailed during the whole of November. The weather was singularly mild; there was no cold weather whatever, and it was after two or three nights of summer-like weather that the girl fell ill of pneumonia. Some weight should be attached to the fact that the disease appeared while she was exposed to poisoning by sewer-gas, and was living in an institution where undoubted cases of sewer-gas poisoning had occurred. Putting all the facts together, he submitted that they were justified in saying that there was some connexion—he did not press the point very much—between the pneumonia in her case and the condition of affairs in the institution.

Dr. Wright had pointed out that the same sanitary defects gave rise to true typhoid fever and to gastro-enteric catarrh. For that he (Dr. Moore) had contended in the third case given in his paper. He also attached importance to Dr. Wright's *de novo* origin of the fever on the top of Dalkey Hill, although of course some person might have deposited typhoid germs in the privy. As to Dr. Kennedy's observations, they could readily understand that persons could become acclimatised to conditions to which others could not be suddenly exposed without very disastrous results. Persons might attend a fever hospital for years, and might at last succumb to typhoid or typhus. As Dr. Finny had said, the receptivity of an individual, no doubt, varied from time to time, according to his state of health. Dr. Cranny seemed to think that there was no connexion between the drinking water and the disease in the training institution, but it should be remembered that sewer-gas was readily taken up by water. The cistern was in a closely-confined area, and the overflow from the untrapped drain was sufficient to account for the pollution of the water. That it was polluted was proved by Dr. Cameron's analysis.

Dr. Henry Kennedy read a paper, entitled "Remarks on Salisbury's Views relating to the Treatment of Phthisis." [It will be found at p. 87].

The Vice-President said they were indebted to Dr. Kennedy for bringing forward Dr. Salisbury's novel views as to the origin and treatment of phthisis. The late Professor Niemeyer did not limit the ætiology of phthisis to pneumonia. He recognised tubercular phthisis as independent of pneumonic phthisis, and occurring either as acute miliary tuberculosis of the lungs or as a secondary neoplasm or new growth in the lungs. Niemeyer desired to expose the fallacy that the caseous masses so often found in the lungs were in every case tubercular. The withholding of cod-liver oil was quite consistent with Dr. Salisbury's views as to the ætiology of the affection, but it was not easy to follow that writer in what he said about "yeast in the stomach." He probably meant to imply that a fermentative process was set up which led to some morbid condition of the blood, predisposing to destructive lung disease.

Brigade-Surgeon Jackson said he had had many years' experience of pneumonia amongst soldiers; many patients partially recovered, but afterwards fell into a low state of health. If from a fresh cold or any other cause fresh action was set up, the temperature would rise again, and consumption would set in. Afterwards, on examination, more or less extensive portions of the lungs would be found to be tubercular.

Dr. Finny observed that Dr. Kennedy had on the one hand condemned most of the points of Salisbury's treatment, and yet on the other he had alluded to them as "brilliant." He (Dr. Finny) was one of those who did

not agree with the author of the paper, or even with the late Dr. Stokes, in believing in a pre-tubercular stage and a deposit stage of tubercle as a cause of consumption; but he did follow the steps of Niemeyer as to its most usual inflammatory origin in the smaller bronchi and pulmonary vesicles. Niemeyer, and those who adopted his views, recognised a "pre-consumptive" stage—every physician did. There was a certain lowering of the constitution and system, after which, in a certain time, the consumption was developed. It was in that early stage, he presumed, that Salisbury noticed those wonderful things in the blood, in addition to spanæmia. They should be careful about accepting the observations of a single man, or of a single microscopist, for there was no person, however clever, who was not liable to a bias of observations, in some degree, under the influence of a preconceived idea. They should not, he thought, without very great confirmatory evidence, receive this idea of yeast (!) in the blood. If they acknowledged such a state of the blood to exist, and were able, in a given case, to find it, it would be doubtless a great step towards making up their minds that the case was likely to develop into phthisis, but Salisbury's weak point was that he acknowledged the same state of blood to exist in a number of other cases; and many other cases might be quoted in this country besides those mentioned in which a similar state of anæmia was found. Niemeyer quite understood that there was a state of body called scrofulous, a low state, in which there was strumous disease, catarrhal pneumonia, and caseation of the lung, with or without the development of tubercle. He (Dr. Finny) considered further that Salisbury's observations on the state of the blood, even if confirmed by others, were of very little practical advantage, for how were they to obtain the blood of a patient who was in this low state of health, in order to examine it and decide what kind of food he was to get, as patients do not generally consult a physician until some definite symptoms develop themselves. If the tuberculosis developed in the pigs fed as Salisbury described, it was only because the animals were in a low state of health, similar to that of persons living under bad sanitary conditions. He also took exception, as a practical physician, to the pre-tubercular theory, and to the tubercular deposit theory. These were thoroughly unpractical, and led to a most gloomy and disheartening line of treatment. He did not think they had any evidence before them that tubercle, once widely spread, had ever been recovered from. In conclusion, with reference to Salisbury's animal dietary to be exclusive of starchy foods, he begged to call attention to the advantage he had frequently derived from a mode of treatment the opposite of Salisbury's—namely, the administration of maltine to phthisical patients. Many who could not take cod-liver oil had been able to take maltine in combination with a considerable quantity of starchy food, with decided and permanent advantage.

Dr. Henry Kennedy (in reply) remarked that the swine experimented on showed signs of sickness in three weeks, disease appearing first in the bowels, and then in the lungs. The natural history of pneumonia was quite sufficient to establish the fact that it was not the starting point of phthisis, save in exceptional cases. If it attacked the upper part of the lungs, as phthisis notoriously did, he could understand the theory; but pneumonia of the upper lobe of the lung was very rare. On the other hand, phthisis commenced in an insidious, slow, and doubtful manner, this state of things lasting for weeks and months before the physical signs of the disease developed. There was something wrong with the patient, but nothing that could be detected. There might be weak respiration; but he had never known ordinary pleuro-pneumonia to be the precursor of tubercular disease. He did not say that he had not seen cases in which pneumonia ran into phthisis; but the vast majority of patients attacked by pneumonia recovered.

The Society then adjourned.

A NEW SOLVENT FOR DIPHTHERITIC MEMBRANE.

Dr. Hale White, after performing tracheotomy on a child suffering from diphtheria, sprayed the throat with a Siegle's spray, putting half an ounce of the glycerin of pepsin into the glass bottle. The spray was repeated every two hours from the evening of July 7th until the evening of July 10th, when, as no membrane had been coughed up for twelve hours, the spray was discontinued. Dr. White states that it was the opinion of all who saw the pieces expelled that they had a very soft and gelatinous character, as compared with the thick, tough pieces of membrane usually seen. The case was a bad one, as the child had a temperature of 104°, and suffered from vomiting and diarrhœa. The child continued to do well until it got broncho-pneumonia, owing to sudden changes in the weather. After death the examination showed that the pepsin had not caused any ill effect upon the lungs, bronchial tubes, or trachea. The pepsin was raised to its active temperature by being immersed in water at 110° F. before it was used. The vapour coming from the spray apparatus was not hot enough to destroy the activity of the pepsin, and as the child had a steam bottle attached to the tent, the air in the trachea did not cool it. Dr. White believes that the chief good was done by the pepsin getting thoroughly mixed with the secretions in the small tubes and preventing the formation of membrane there, and not by its action upon the large pieces of membrane lining the trachea and bronchi.—*The Lancet*, Oct. 22, 1881, and *The Practitioner*, Jan., 1882.

PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

FORTY-FOURTH ANNUAL SESSION.

JOHN A. BYRNE, M.B., President.
WILLIAM ROE, M.D., Honorary Secretary.

Saturday, December 3, 1881.

DR. J. A. BYRNE, President, in the Chair.

New Obstetrical Instruments.

DR. R. BEVERLY COLE, of San Francisco, exhibited, by permission, several new instruments, and made observations on their use. He said: The first instrument is a tubular speculum. It is made of vulcanite, and weighs only two ounces. It has three movements. A concave mirror, which slides on a groove within it, directs the light on to the vaginal portion of the uterus. This is not a perfect specimen of the instrument, having been made in London in the place of one that was injured. It is of the ordinary bi-valve form. I have found that in Great Britain the tubular speculum of Ferguson is very much in vogue. It is, no doubt, an excellent instrument, but, according to my experience, it is a most clumsy one to employ. From its large size and unyielding character, the use of it occasions, in the majority of instances, great pain; and without great care being used in its employment, the edges of it will lacerate the mucous membrane. And it is not always that great care is taken in the use of such instruments. But the one before you, no matter how bungling the application of it, cannot injure the woman. With Ferguson's instrument an assistant is indispensable, and you must have everything ready to your hand. You can bring the cervix into the fold of the instrument before you, which is not an easy thing to do with Ferguson's. I claim for it that it will obtain a larger field than you can get with any tubular speculum that is admissible in the majority of cases, particularly with unmarried women. The woman is placed lying on her back; and if you want the anterior valve shorter than the posterior, you can make it so by means of this movement. The instrument is a very cheap one. This was made by Meyer and Metzler, of London. In America it is made for about 16s. Another important advantage of it is that you can use any acid you wish to apply, as the glass and the vulcanite are unassailable. The next subject to which I

have to invite your attention is that of sponge-tents. I have employed the laminaria a great deal, and have satisfied myself that it is, at least, not of the same value in my hands that it seems to be in the hands of others. I have recently employed a plant called the Tupelo, which grows in the Southern States of North America, and which has recently found great favour in America. I have found both tangle-weed and tupelo to be liable to two objections—one is that they are slow in their action; another is that they are very stiff. For these reasons I have eschewed the woody articles I have mentioned, and have gone back to the original idea by Mackenzie—the invention of the sponge-tent. I now show you how I prepare these tents. [Having shown with wax and sponge the method of making the tent, Dr. Cole proceeded to say]—I do not put the woman in bed. I simply introduce the tent in the morning, and tell her to come back in eight hours; and I then generally find the sponge perfectly dilated. I have next to refer to this forceps. I am aware that views very widely different from mine are entertained here as to the mode of employing the forceps. The Americans, like the French, are very much in the habit of placing the patient upon her back when they use the forceps. During ordinary natural labour, on the other hand, they follow the British practice of placing the woman on her left side. [Dr. Cole illustrated by a model what he maintained to be the awkwardness of applying a forceps with the patient lying on her left side. He then showed the mode of using the forceps with the patient lying on her back.] Rotation so can be effected without the slightest danger. I have nothing to say against Barnes's instrument, or any other that you employ. [Dr. Cole then exhibited and explained a forceps of his own.] I am told that there is danger of compressing the child's head too much with it, but I cannot discover any grounds for that apprehension. The handles of Barnes's instrument are perfectly straight, the result of which is that in the high operation you are obliged to force them against the perinæum, which, even if it produces no other mischief, will certainly give rise to pain. The instrument which I now show you I have used for seventeen years. The advantage of the curve is that pressure on the perinæum can be relieved. The broad fenestrum which it possesses holds the head better than the narrow one. This instrument is only an improvement of Hodges' well-known forceps. The weight of the forceps before you is only 13½ ounces, and the handles can be used as blunt hooks.

Dr. Johnston.—Dr. Cole's speculum is certainly an improvement upon anything I have seen. As regards the posture of the patient in forceps applications, I must still maintain that our practice of placing her on her side is the most convenient both for the mother and the obstetrician. I have seen the other mode adopted in both Paris and Edinburgh.

Dr. Darby.—With regard to the position of a woman when the forceps is applied, I do not lay too much stress on it. Not long ago I delivered a woman who was lying on her back in puerperal convulsions.

The President thought that all were unanimous in their approval of the speculum exhibited by Dr. Cole. Through his kindness he had an opportunity of seeing it in London, although it was not exhibited at the Medical Congress. It appears to be an instrument extremely useful, and one calculated for almost every purpose. He agreed with him that there are conditions of the vagina in which the use of Fergusson's speculum is attended with pain. This is particularly manifest in young unmarried women, in whom the vagina is narrow and sensitive. The bivalve speculum, or Dr. Graily Hewitt's, is a very convenient one in those cases, but he thought that Dr. Cole's speculum possesses advantages over either. With reference to the sponge-tents, whose use Dr. Cole advocates in preference to the sea-tangle, he certainly did agree with him for two reasons—1stly, because of the sponge-tents being liable to putrefaction (Dr. Cole explained that they could be carbolised); 2ndly, because he (Dr. Byrne) found that in his practice, although the carbolised sponge-tents which he used expanded rapidly, and dilated the unresisting parts well, yet when it was employed in dilating the inner portion of the cervix and the internal os uteri, it was comparatively useless, as they offered a resistance to dilatation which no sponge-tent could overcome. He had no doubt that Dr. Cole's preparation of sponge might be useful, but, for the reasons he mentioned, he preferred the laminaria digitata tents. Dr. Cole's forceps, in his opinion, was a very nice instrument, and no doubt in experienced hands like Dr. Cole's it was capable of performing both the high and the low operation, but he thought that the blades were too closely approximated, and that Dr. Barnes's instrument had an advantage over it in this respect. He was certain that the Society felt very much indebted to Dr. Cole for exhibiting those instruments, and also for taking so much trouble in showing the manner in which he prepared the sponge-tents.

Dr. Atthill.—I endorse what has been said in favour of Dr. Cole's speculum, and shall certainly get one, but I object to the use of sponge-tents, no matter how prepared. As to the forceps, I am a decided advocate for the double-curved forceps of Barnes in preference to the straight instrument. I have used both. I have seen the straight forceps slip, but have never known the double-curved one to do so. I am a disbeliever in the power of the straight forceps to rotate the head, but the head may rotate during extraction, and I have several times seen this to occur while using Barnes's forceps. My objections to Dr. Cole's forceps are twofold. I think it is not sufficiently curved at its extremities, and that the space between the blades is insufficient, consequently

there is danger of compressing the child's head with it to an extent that endangers its life.

Dr. Cole.—I have only two or three words to say in reply. I shall be glad to know that you have tried the speculum. As to the sponge-tent, I did not expect to convince anybody here that it was the best thing. As regards the position of the patient in forceps applications, I have the same thing to say. I have maintained that the instrument ought to be applied with reference to the long axis of the child's head. Regardless of the position of the child in the pelvis, I have fearlessly used the sponge-tent in stenosis, and never had a piece of the sponge broken in the uterus. I admit that sponge does insinuate itself into the meshes of the mucous membrane, and that its removal may, in consequence, be attended with slight hæmorrhage. Dr. Marion Sims has told me that he effected dilatation in twenty-four hours, which you could not do with sea-tangle. I have used sponge-tent for thirty years, and have never had but one case of pelvic cellulitis, and that occurred through the carelessness of the woman herself. Gentlemen, I am very much obliged to you for the attention you have given me, although we may have differed in opinion.

The Society then adjourned.

CAPSICUM IN THE TREATMENT OF UTERINE HÆMORRHAGES.

The successful use by Dr. Allègre of the powder and watery extract of capsicum annuum in the treatment of piles, has led Prof. Chéron to consider the physiological action, and to extend the use, of this drug. After a large number of experiments Prof. Chéron has arrived at the conclusion that it acts upon the vascular system, and more especially upon those organs and tissues in which there is an extensive capillary circulation, such as the utero-ovarian and respiratory tracts, as well as the brain. Cayenne pepper acts, like ergot, either directly or through the vaso-motor nerves, upon the unstriped muscle fibre of the vascular walls. It is, however, more useful than ergot, since it is readily tolerated by the stomach, whose functions it improves. Prof. Chéron has employed the remedy for some years in cases of uterine hæmorrhage, due to fibroids, to granular endometritis, or epithelioma. He finds the following are the best formulæ :—1. Powdered capsicum, five grams, for thirty pills. A pill to be taken after each meal; the number to be increased up to six a day. 2. Watery extract of capsicum, five grams, for thirty pills, to be taken as above. 3. Tincture of capsicum, 5 grams; rum, 30 grams; gum julep, 120 grams. A dessert-spoonful to be taken every two hours. Capsicum is also of service in that form of congestive headache which is so common in rheumatic patients, as well as in the hæmoptysis of phthisis.—*Le Progrès Médical*, Oct. 15, 1881, and *The Practitioner*, Jan., 1882.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

President—William Stokes, M.D., F.R.C.S.I.
Secretary—E. H. Bennett, M.D.

Multilocular Ovarian Tumour.—Dr. Duffey said: At the request of Dr. Atthill, Master of the Rotunda Hospital, I exhibit this ovarian tumour removed by him on Monday last. The subject of the operation was a married woman, aged forty, who had had five children. Her health had been always good until a year ago, when she experienced pain in the ovarian region. Menstruation ceased for some months, and then recurred once or twice scantily.

She had believed herself pregnant in consequence of the gradual increase in size of her abdomen. She was tapped once in two months, and a large quantity of dark grumous fluid removed. Her abdomen was very pendulous and bagging between the thighs, and the tumour was evidently a large multilocular cyst. Her bowels were regular and her urine normal. The operation was performed on the 14th; some, not dense, anterior adhesions were met with. The pedicle was long and twisted; the peritoneum was extremely vascular, and there was much oozing from it which was restrained by cautery and ligatures. There was no vomiting during or after the operation, and the patient seemed to be doing well. Within six hours her temperature rose to 101°, and in ten hours to 102°, her pulse being 120; twenty-four hours after the operation her temperature was 100°, and her pulse 96; in thirty-six hours her temperature was 102°; and in forty-eight hours it had fallen to 100°; sixty hours after the operation it was 102°, and in sixty-six hours it had fallen again to 100°. Her pulse all this time remained 96. After this her temperature rose to 103°, and her pulse to 100. Four hours before her death her breathing became extremely rapid, and her lips cyanotic. She complained of great precordial distress, anxiety, and restlessness. With the exception of the precordial pain she complained of no other pain from first to last, nor was there any cough or difficulty of breathing. There was very little tympany. She died seventy-two hours after the operation. I made a *post mortem* examination of the body yesterday morning, forty-eight hours after her death. The body was of a pale lemon colour and well nourished. There was an abdominal incision which extended from three-quarters of an inch below the umbilicus three inches downwards. It had united superficially, but on traction it

separated and exposed the abdominal cavity, out of which welled some bubbles of air and sanguineous fluid. A slight amount of semifluid blood was in the incision subcutaneously, but there was only one small focus of pus in it, not larger than a pin's head. There was extensive recent peritonitis, especially in the left iliac region, where the adhesions were noticed during the operation. The peritoneum had been apparently the seat also of chronic inflammation. It was thickened and discoloured. In the left iliac region there was considerable vascularity, and small clots of blood were attached to the peritoneum and to the intestines, which were adherent to the parietal peritoneum and to each other. Cacoplastic lymph was deposited between the folds of the intestines, and there were also some flocculi of lymph in the fluid of the abdomen. In addition to the sanguineous fluid in the abdomen there was also some ascitic fluid loculated in the right iliac region. The omentum was extremely vascular and injected, but I could not discover any distinct point of hæmorrhage. No ligature had been applied to the omentum. The liver was extremely enlarged, and presented the macroscopic appearances of amyloid degeneration, and gave the characteristic reaction with tincture of iodine, as did also the kidneys, which were likewise enlarged and of a pale colour. The spleen was also enlarged. The stomach was extremely distended, and had pushed up the diaphragm. The uterus was fixed. The right ovary had been removed very close to the uterus. There was no oozing, nor any hæmorrhage from where the ligature had been applied. The uterus was of a rather peculiar shape, its right cornu being dragged upwards and outwards, presumably by the traction of the tumour. The internal cavity of the uterus measured $3\frac{3}{4}$ inches; and there was a small pedunculated polypus attached to the internal os. There were several patulous vessels at the os internum. The left ovary was shrivelled, hard, its surface irregular, and it was probably caseous. There were three small pedunculated cysts in the vicinity of this ovary—one in connexion with the fimbriated extremity of the Fallopian tube (Hydatid of Morgagni?), another attached to the parovarium, and the third in connexion with the ovary itself—all contained more or less sanguineous fluid. The tumour removed by Dr. Atthill is a very large and multilocular cyst; there are numerous fleshy-looking bands passing through it, forming cavities which contain a grumous viscid fluid corresponding with that removed by the preliminary tapping. On opening the thorax the lungs did not collapse. They were extremely emphysematous at the edges, and there were firm pleural adhesions. On opening the heart the right auricle was found extremely distended, and it contained a quantity of fluid and frothy blood. The right ventricle also contained some fluid and some clotted blood of a rather granular consistency, and mingled with some air bubbles. The left side of the heart was empty. There was no valvular disease. The upper lobe of the right lung was

the seat of several cicatricial depressions, around which were the usual emphysematous swellings. The upper lobe was also the seat of acute pneumonia. The lower lobe was slightly congested and œdematous. The left lung was engorged, but more passively than actively. I believe the immediate cause of death to have been the pneumonia of the right lung.

The PRESIDENT remarked that there was distinct evidence of previous peritonitis, and he had very little doubt that it was of that the woman died. There were no great difficulties attending the operation. There were some adhesions but they were not large or firm, and the hæmorrhage was easily controlled.

DR. BENNETT said he had the opportunity of closely observing the tumour during its removal, and one point which particularly struck him was the great and permanent rotation of the pedicle. It was unusually large, and the tumour had to be turned three times before it could be put straight in order to apply the clamp to it. It was clear that this condition must have supervened before the adhesions occurred. It was evidently a torsion of the pedicle, of old standing. It was held by some that torsion of the pedicle, such as this, was apt to arrest the growth of the tumour, but it was clear that in the present case the growth of the tumour was not arrested, but, on the contrary, that it was extremely rapid within the month previous to the operation. Possibly the course was that the torsion of the pedicle produced some congestion which, at the outset, set the peritonitis going. The vascular supply of the tumour must have been largely provided for through the adhesions to the abdominal wall, because the vessels at the base of it, though large, did not give any trouble in the way of bleeding through their twisted condition, which implied a not very free circulation such as would be required to enable the tumour to grow as rapidly as this did. The torsion of this pedicle was the greatest that he had ever seen in any tumour. A point of clinical importance was this:—There was extensive evidence of amyloid degeneration of both the liver and the kidneys, yet no evidence of it had been afforded by the clinical examination of the urine. Had the presence of amyloid degeneration been detected most operators would have declined operating, because in such cases the operation was usually badly borne, and was commonly fatal.

The PRESIDENT.—Was there any connexion between the twists of the pedicle and the peritonitis? There was no peritonitis at the time of the operation.

DR. BENNETT.—There were extensive adhesions and evidence of past peritonitis. The extreme torsion of the pedicle set agoing the irritation about the tumour that caused these adhesions. The adhesions had fixed the tumour, and the pedicle was like a bell-rope with three strands in it.

DR. MACAN said the interesting point in the case was, what had

caused death. The acute pneumonia was not of great extent. He did not think there had been much stoppage of circulation in the tumour.

Dr. Stoker said he failed to see how the cutting off of the supply of blood from the tumour could have induced inflammatory action; and, as suppuration usually resulted from inflammation, he also failed to see how it could have occurred.

Dr. Macan said it was well known that torsion of a pedicle led to suppuration of the cyst.

The President concurred with Dr. Macan that a twisted short pedicle led to suppurative inflammation of the tumour.

Dr. Duffey (in reply) said that the entire upper lobe of the right lung was in a state of very acute pneumonia. On section it presented a bright red granular appearance; and on pressure dark blood exuded from the vessels. The lower lobe of the same lung was in a state of extreme œdema. These conditions, together with congestion of the other lung in a person evidently the subject of blood-poisoning, were sufficient to be the immediate cause of death. He did not know whether the peritonitis was an exciting cause of the pneumonia or not; perhaps it was. He believed that the patient was in a state of septicæmia. Air exuded from the heart on a section of the right ventricle. As to the exciting cause of the old peritonitis one of the firmest of the adhesions was certainly in the right iliac region, which was in the vicinity of the pedicle.—*November* 19, 1881.

Large Gall-stones passed per Anum.—Dr. J. W. Moore said: On 26th April last I was asked by Sir George Owens to see, in consultation with him, an elderly woman, a confidential servant, who was in extreme pain. Previous to her illness she had led a rather sedentary life, having no hard house-work to do. She had been in bad health for a considerable time, complaining of severe abdominal pain, and she had also recurrent dyspeptic symptoms. When I visited her she was in great agony and looked very prostrate, as if she had passed through severe physical suffering. The principal seats of pain were the epigastrium, the right hypochondrium, and the right iliac fossa. To some extent also pain shot down the front of her thigh. She was absolutely without appetite. Her bowels were obstinately confined, and from time to time she vomited bilious matter. Were it not for the downward reflection of the pain one would have said that she suffered from biliary colic, which, even under the circumstances, was the most probable explanation of her symptoms. The pain was also met with in the lumbar regions. After a few days she got some relief; but in three weeks afterwards she was again reduced to an extreme degree of prostration by another attack of the same pain, combined, as before, with obstinate and incessant vomiting and very intractable constipation. So hopeless did her state now seem that we

momentarily expected her death ; but just as she seemed to be passing into the collapse of death, signs of improvement showed themselves, and these progressively increased until after a few days she was restored to comparative health. Simultaneously with the improvement her bowels began to act of themselves, and after a few days an examination of the motions revealed the presence of several large gall-stones. Some of the largest of these Sir George Owens has been kind enough to send me. The largest calculus is of remarkable size; it is three-quarters of an inch in length in its short axis and one inch in its long axis, its short circumference is two inches and three-quarters, and its long circumference is three inches and a-half. We can well understand what intense physical suffering would be caused by the passage of such a stone along the bile-duct. An important point connected with the case is that jaundice was never very well marked. The explanation of that is, that from the angular shape of the stone the bile was able to pass alongside it into the intestine. The illness of the woman began in April and terminated in May, and she has since enjoyed comparatively good health. During her illness there was only slight jaundice.

The Rev. Dr. Haughton said he had a very fine collection of gall-stones. He had examined all the angles of the different facets exhibited in the various stones, his idea being that gall-stones as they formed took primarily a spherical shape, and that their subsequent development should exhibit the facets of bodies increasing in size in a spherical form under compression. Darwin had ingeniously shown that the cell of the bee was in like manner primarily a cylinder, but that it took the form of a rhombic dodecahedron from the pressure of the cells surrounding it in which the other bees worked. In the case of the gall-stone, the angles it would develop should be those of the five great solids as explained in the Fifteenth Book of Euclid. There was not a single angle of any stone that he had examined that was not some one or other of the possible angles of those solids, which was a mathematical demonstration of how gall-stones grew.—*November* 26, 1881.

Micrococci in Sympathetic Ophthalmia.—Mr. Abraham made the following communication, jointly from himself and Mr. Story :—Any facts bearing upon the connexion of micro-organisms with disease will, no doubt, be considered of interest by the members of this Society. In a recent paper Professor Leber, of Göttingen, published the observation by him of the presence of microscopic organisms, in a case of sympathetic ophthalmia, within the sheath of the optic nerve and in the humours of the eye-ball itself. I have Mr. Story's authority for stating that until to-day these observations have not been repeated or corroborated. A suitable case having presented itself at St. Mark's Ophthalmic Hospital, Mr. Story this morning enucleated the

globe and kindly allowed me to make some microscopic examinations upon the spot. Following Professor Leber's example, I teased out, in normal salt solution, a small portion of the sheath of the optic nerve and of the tissue beneath—*i.e.*, of the wall of the perineural lymphatic space—and on the slide thus prepared we found large, moving, micrococci-looking bodies. The eye-ball was then punctured, and fluid from the vitreous chamber carefully examined. The following note, taken down by Mr. Story from my dictation, expresses the appearances observed :—" Vitreous fluid of a sherry colour, containing numerous blood-corpuscles, red and colourless, besides a profusion of roundish and oval micrococci, moving briskly and varying much in size. Some are very large—a few as large as one-fifth the diameter of a red blood-corpuscle—others hardly visible with the one-sixth (Crouch) object glass and No. 2 eye-piece; some of the intermediate-sized are of an oval shape. The smaller ones are often arranged in rows—two, three, four, in number, and sometimes with one of the number standing out from the side of the row ; others of the smaller ones are in irregular clumps. A colourless blood-corpuscle crossing the field of vision is covered with rugosities—apparently consisting of micrococci." I have put up several specimens stained according to Professor Koch's method, with gentian-violet, for future more minute examination; and the eye-ball itself has been placed in absolute alcohol with the same view. The specimen under the microscope now on the table is a slide of the vitreous fluid in its original condition, and I think that all who look at it will have no doubt of its being full of micro-organisms. We do not often have an opportunity at this Society of examining the micro-organisms of fresh pathological specimens, and it is as much on that account as because of the importance of the corroboration of Professor Leber's discovery that Mr. Story and myself thought it worth while bringing the subject forward this evening.—*November* 26, 1881.

Acute Ulcerative Endocarditis.—Dr. Walter Smith said : This heart offers an example of a comparatively rare and always formidable disease—I refer to acute ulcerating endocarditis. It was removed from the body of a young girl who was admitted into the Adelaide Hospital some months since, under the care of one of my then colleagues. She looked very ill, was feverish, and her general condition might be expressed by saying that she seemed in a profoundly typhoid condition. She lived only two days, and no positive diagnosis of her case was arrived at. No morbid appearance of any interest was found, except in connexion with the heart. Its right cavities are normal. On the left side, however, one of the aortic valves is eaten away a considerable depth, and its margins are surrounded with numerous vegetating nodules. Above the edge of the mitral valve are a number of irregular nodules. Several of the chordæ tendineæ of the mitral valve are torn across, and the edge of the valve presents a

beautifully fimbriated and highly vascular appearance. I sent the heart to Dr. Harvey, who authorises me to state that he found micrococci in the fresh blood removed from the heart, but not in the texture of the heart itself. Anyone looking at the specimen will recognise the marked difference between ulcerating endocarditis and acute or subacute rheumatic endocarditis. The seat of the disease is sharply limited to the valves. The age of the patient, the non-existence of rheumatism, or renal disease, and the discovery of micrococci, all point to the existence of a malignant septic disease totally different in its nature from the ordinary endocarditis we are familiar with. One other feature is to be noticed. It is well known that a certain amount of patency of the foramen ovale occurs in about one in thirty cases, but it is not usual for such an extreme degree of communication as obtains in this case to occur. My little finger can almost go in from one auricle to the other; and the valve that closes the foramen ovale is crenulated at its upper margin, and there is a little indentation communicating with the two large apertures that exist in it; at the same time the opening is so oblique that we may suppose such conditions as these to exist without leading to any serious disturbance in the health of the patient. Another interesting circumstance connected with the specimen is the development of an acute aneurism of the mitral valve. There is a sharply-cut aperture in the ventricular surface of the valve, the edges of which, when seen in the recent state, were regular and highly vascular, and led to a pouch about the size of a pea; so that the ulcerative process had destroyed one lamella of the valve, and the pressure of the blood forced out the other into the aneurismal bulging. As to the duration of the case—and of this class of cases in general—we are, in consequence of an imperfect clinical history, greatly in the dark; but from the excessive thinness of the curtain of the valve, I think we may conclude that in this case the duration of the ulcerating process was brief. I think there is reason to believe that some of these cases perish in a few days from the commencement of the symptoms.—*November* 26, 1881.

Enormous Thoracic Aneurism, rendering the Aortic Valves incompetent.—Dr. J. W. Moore said: A discharged soldier, aged forty-three years, married, but childless, was admitted into the Meath Hospital on the 28th of last October. His present illness dated from the beginning of October, 1879, when he was suddenly seized with a cough, although he had not taken cold. In the following November this cough developed into a severe attack of bronchitis. He had previously enjoyed good health, with the exception of an attack of syphilis in 1858 or 1859, and a rheumatic fever, while serving with his regiment in India. There were traces on his body of old syphilitic eruptions. In December, 1879, two months after he was attacked with the cough, his right arm swelled, and the swelling extended

over the right side of his chest and neck, and over the whole of his face. Since January, 1880, he had been ill from time to time. The swelling, which was at first confined to the right side of the chest and neck, afterwards became general. For the past two years his voice had been husky. His present attack commenced in the beginning of October, 1881, with the first decided fall of temperature, and was marked by increasing cough and expectoration, which was at first muco-purulent in character, but afterwards became intimately mixed with blood. Even during his illness the appetite remained good, and his bowels were regular. At the time of his admission into hospital his urine was scanty in quantity, high coloured, and loaded with urates, but only slightly albuminous. His cough was frequently brassy. In the left radial artery the pulse was of the sledge-hammer type; that in the right radial was much weaker. There was visible pulsation in many of the vessels on the left side, but the pulsations on the right side were partly concealed by great œdema, and were partly interfered with by a large aneurismal tumour. The point of maximal cardiac impulse was in the seventh interspace three and a-half inches outside the left nipple—that is, far away towards the infra-axillary region. The second area of impulse was at the parasternal line in the second right interspace. The murmurs of aortic regurgitation were present, and the second sound was exceedingly indistinct in the carotids, and also over the aneurismal tumour. The liver was somewhat enlarged. For a time he progressed favourably, but on 17th November dysphagia became extreme, and intermittent aphonia appeared. Crepitation was now heard over the back of the left lung; the urine became very scanty and highly albuminous. On 22nd Nov. dyspnœa gave place to orthopnœa. He died on the morning of 30th Nov.

On making a *post mortem* examination we found evidences of general anasarca; the liver was displaced downwards two and a half inches below the ribs, and weighed 3 lbs. $7\frac{1}{2}$ ounces, affording a good example of nutmeg liver. It was also undergoing a general fatty degeneration. It was impossible to detach the left lung from the pleura, so absolutely adherent was it; this lung was also in a state of extreme collapse. In this we have the explanation of the mode of death. The apex of the right lung was rigidly adherent to the outer surface of the aneurismal sac. Scattered here and there throughout it were nodules of caseous degeneration. Its lower lobe was hyperæmic, and not so fully aerated as the upper lobe. The anterior portion of the chest was occupied by a gigantic aneurism springing from the ascending aorta. Its sac contained a solid mass of fibrin, weighing 20 ounces. Practically this aneurism was cured. On slitting up the aorta it presented appearances of very advanced atheromatous disease. It was lined with calcareous plates, and was enormously dilated and pouched. The aortic valves were examined with great interest, owing to the undoubted signs of aortic regurgitation which were

present during life. The valves were singularly healthy, except one, which had a slight patch of atheroma near its centre, so that the incompetency was due to the vast dilatation of the aorta immediately above the aortic orifice. One of the coronary arteries was cut across, and it seemed to be perfectly healthy. Passing to the left ventricle we find that at some period antecedent to death it must have been considerably hypertrophied, but that subsequently it underwent considerable dilatation. Dr. Harvey kindly examined the muscular tissue of the heart microscopically, and he reports that it is in a state of interstitial fatty degeneration. The mitral valve is considerably dilated, and admits the tips of four fingers. The pulmonary artery is also apparently dilated, and we may suppose that this was caused by the great obstruction to the pulmonary circulation. The innominate artery was involved in the atheromatous degeneration. The aneurismal sac was in close relation with the trachea, and also with the œsophagus—a fact which explains the intense dyspnœa and distressing dysphagia during the terminal weeks of the man's life.

As to the ætiology of the atheromatous disease and of the aneurism, in the first place his occupation as a soldier is to be remembered, and again, the history of syphilis and of acute rheumatism is highly suggestive. The right kidney weighed six, and the left five and a half ounces; their capsules are non-adherent, but a puckering of their surface suggests cirrhotic change. The renal veins seem to me to be dilated, as we might expect, in consequence of long-continued passive congestion. The spleen was cirrhosed; its capsule was adherent in places, and there had evidently been some perisplenitis. In connexion with the aneurismal dilatation of the aorta, a very interesting point is that the man was invalided from the army owing to the existence of a popliteal aneurism. I present the portion of the right popliteal artery which was the seat of aneurism; it is almost completely obliterated.

Mr. Tufnell said the case was satisfactory as showing that no matter how near the centre of circulation an aneurism might be, the fibrin of the blood could be deposited so as to convert what would otherwise be a progressively distending aneurismal sac into a common fibrous tumour.—*December* 3, 1881.

Fractures of the Skull.—Mr. Thomson said: Through the kindness of Dr. Jacob, of Maryborough, I am enabled to exhibit a series of five fractures of the skull, three of them being different from each other, and the remaining two rather similar. These now before you belong to the museum of the late Dr. Jacob, of Maryborough, and have been lent to me by his son. One represents an injury inflicted by a spade to a portion of the occipital bone, which was rapidly followed by death. There is a depression about two inches long by three-quarters of an inch at its greatest width, the most prominent part of the depression,

RADFORD LIBRARY

as it appears inside, corresponding to the line of contact of the spade. In a second specimen we have the result of an injury done to the occipital bone by a pistol bullet. The subject of the injury was waylaid and fired at at very close quarters. Two bullets passed through his left eye. One lodged in the petrous process of the temporal bone on that side, and the other bullet lodged in his occipital bone. It passed through the inner plate and almost entirely through the outer plate, which it raised up into two ridges, and which was thus made to very much resemble the lid of a small box, with the bullet peeping through. The inner table of the bone is split into three or four portions. The whole area of the depression caused by the bullet on its passage from within outwards is a circumference, the radius of which is about three-quarters of an inch. The third specimen of this series is particularly interesting also. It is labelled a specimen of a fracture of the frontal bone which occurred in a young girl who died three weeks after the receipt of an injury which led to an abscess. On looking at the external portion of the bone no sign whatever of a fracture is visible. A close examination of the internal table reveals a linear fracture. If you look at the external table you will see a small oval portion of the bone nearly an inch in length by about three-quarters in width; this is in process of separation from the rest of the bone, and the lines of separation are well marked. It was simply an island of dead bone in the centre of the living. On reading the history of the case, and looking at the inner part of the bone, we conclude that probably at the seat of the abscess necrosis had been going on at the inner table, which presents a cribriform appearance. This case presents two very interesting conditions. First, it is an instance of what Pott called special attention to—an abscess following a contusion of the skull, and occurring between the dura mater and the inner table. That represents the class of cases in which he had such success in trephining. It occurs to me that in this case trephining would have relieved the symptoms; but I merely hazard that remark without knowing the clinical history of the case. Another point with reference to this particular specimen is that it is a fracture of the inner table of the bone of the skull occurring from contusion of the outer table; specimens of this class of injury are comparatively rare. A great number of cases are supposed to have occurred from bullet injuries, particularly where the bullet impinges on the skull at a particular angle, and, while only contusing the outer table, fractures the inner one. In connexion with that branch of the subject I have to show two other fractures which have been sent to me by Dr. Jacob. These two cases are fractures that he trephined—one about three weeks ago and the other five years ago. The first of these was the case of a groom who was kicked by a horse. We have very well shown the mark of the cock of the shoe driving in the outer table. When we look at the corresponding side of the inner table

of the bone we find that it is driven in, and must have pressed on the brain. Dr. Jacob saw the man half an hour after the injury, and he was suffering from symptoms of violent mania. He was held down while the trephining operation was performed by Dr. Jacob, with the result that on the removal of the piece of bone the symptoms immediately disappeared. The whole injury is comprised in the piece of bone removed by the trephine. The specimen I now direct your attention to is from a case which Dr. Jacob trephined three weeks ago, after an injury also inflicted by the shoe of a horse. A gentleman was thrown while riding, and his horse fell on him and kicked him. In this, as well as in the immediately preceding case, the injury was inflicted on the right parietal bone. There was insensibility until the operation was performed some hours after the injury. We have the portion of bone that was removed with the trephine, and two portions that lay free underneath and pressed on the dura mater. Two of these specimens raise a question with reference to the mode in which fracture of the internal table may occur without any corresponding fracture of the outer table of the bone. The greater number of authorities, I believe, agree in stating that this is owing to the fact that the two plates of bone are of different character and structure. The inner table is vitreous, much denser, and more brittle than the outer table, and cracks when exposed to a force, under which the outer table simply yields. Two later theories may be mentioned:—One is that of Professor Beck, mentioned in Virchow's Archiv—namely, that the inner table fractures because of the irregularity of the vibrations that take place in the two plates. A bullet striking the outer table obliquely and setting it in vibration caused a stretching and depression of its tissue; the shorter brittle tabula vitrea following the process, but not quickly enough, was fissured. The other theory is that of Mr. Teevan, of London, and is that the fracture commences in the line of extension, and not in the line of compression; his idea being that the surface of impact is not broken, but that the surface of extension is. And this he illustrates by what takes place in the fracture of a sheet of ice under pressure, where the under-surface may be found fissured while no fracture appears in the surface to which the pressure was actually applied. If a stick be bent across the knee the separation first takes place on the convex surface, or the surface distant from pressure, or, in other words, occurs where the extension is greatest. That view has received support and approval. I may observe, however, that it uses as illustrations substances of uniform densities, while in the case of the skull the outer and the inner plates are admittedly different in their texture.—*December* 3, 1881.

Enteritis; Peritonitis; Escape of Gall-stones.—Dr. Finny submitted the following:—The liver which I submit to the Society is one removed

from the body of an unmarried woman, aged thirty-eight, who died on the 6th Dec., after a month's residence in the City of Dublin Hospital. In addition to the interest peculiar to the liver itself, it presents, in the history of the inception and progress of the disease to which the patient succumbed, many features of clinical and pathological importance.

The patient, a servant, was admitted on Nov. 4th, under the care of my colleague, Dr. Benson, and came under my care ten days later. She stated she had suffered more or less for years from constipation, and that a few days before seeking admission she had been seized with violent pain in the abdomen, and she was constantly retching without vomiting. On examining the abdomen it was found greatly distended, the skin shining and stretched, and slight pressure over the course of the colon caused the patient to cry out with pain. Dulness was elicited by percussion over the whole large bowel, but particularly at the splenic and hepatic flexures. Pulse on admission 120 and small; temperature 100°; tongue red, glazy, and fissured longitudinally.

Under treatment, directed to relieve the overloaded bowel, in the form of castor-oil enemata and a few grains of calomel by the mouth, great improvement followed. The abdomen was no longer distended, the tenderness disappeared, so that the abdominal contents could be handled without much pain, and the dulness was limited to the right hypochondrium, corresponding to the hepatic flexure of the colon. The sensation conveyed by palpation was that the bowels were either still full of soft feculent matter, or else that they were matted together.

The bowels, which were usually acted on by enemata, on the 16th became very free, and the motions presented shreds of mucous membrane and bloody mucus. The patient also complained much of cutting pains in the lower part of the abdomen as well as across the epigastrium; pressure gave no relief, although the pains came on in paroxysms. There was also much gastric irritability, with occasional vomiting. It was evident that enteritis with perhaps some peritonitis of a subacute nature existed, and the patient required narcotics to induce sleep and to quiet the pain.

The febrile disturbance from this on to the day of her death was never great, the highest evening temperature ever reached not exceeding 101°, the readings being normal on many days, both morning and evening. The pulse never gained volume or strength, and was usually 112–124. The inflammatory attack of the 16th was of short duration, as all the blood and mucus disappeared, and in a couple of days subsequently oatmeal tea injections, which were employed twice a week, brought away fœtid brown stools with a mortar-like sediment, and there never after was either blood or mucus. Three days before her death the abdominal pains returned, and were chiefly referred to the hypochondrium and epigrastrium; constant regurgitation of food and mucus came on; the tongue was covered with aphthæ, the asthenia and emaciation increased, and she

sank on the 6th instant. There was not at any time jaundice, or suppression of urine.

The *post mortem* examination was made fourteen hours after death by Mr. W. F. Law, our medical resident pupil, assisted by Mr. Ashe, the house surgeon. The abdomen was the only part examined.

On cutting through the parietes the peritoneal cavity was found obliterated in many places, as the visceral and parietal layers were found adherent by a layer of lymph. On separating these layers a number of gall-stones, which at once caught the eye on opening above, near the umbilicus, were found lying loose at several inches distance from the liver or gall-bladder. The small intestines were of a deep purple-red colour, in some places quite black and greatly distended, and emitted a most offensive odour of putrefaction. The whole of the intestines were matted together with adhesions, the matting being most apparent at the right flexure of the colon, and in this situation they were strongly adherent to the right lobe of the liver, and to what afterwards was made out to be the gall-bladder, but which was so narrowed, elongated, and dragged out of its bed as to look like part of the bowels.

In the matted and semi-gangrenous condition of the intestines, which yielded to my moderate handling, it was found impossible to discover any rupture of them, or to identify the spot where the gall-stones originally escaped. Broken-down lymph and pus in a considerable quantity was found in the cavity of the pelvis, and also under the left lobe of the liver and near the cardiac end of it. The upper surface of the left lobe was covered with a yellow coating of lymph nearly one-eighth of an inch thick.

The kidneys exhibit commencing fatty disease, and the liver is in a similar condition, pitting on pressure—soft and greasy to the feel; it is not enlarged. The blood-vessels entering its fissure are unaffected, but the hepatic ducts are dilated, and contain each a small pale-coloured gall-stone as well as a quantity of bright yellow bile; the biliary ducts have been traced to some distance, but no other concretions were detected. From the shape, colour, consistence, and facetted appearance of the stones found in the ducts, I consider their being there but accidental, and that they were originally formed in the gall-bladder, which contains several others of the same nature, and that in the vomiting or other movements during the latter portion of life they were dislodged and passed through the opening of the cystic-duct and were forced upwards towards the liver.

The gall-bladder extends as a long straight purse, two inches below, to the edge of the liver, and its lower end is matted with the adhesions which joined it and the transverse colon and duodenum all together.

The following are the steps of the disease (as I read them) as they occurred :—

1. Habitual constipation and loading of the large intestine.

2. Ulcerative inflammation of the bowels and consequent peritonitis, engaging the left lobe of the liver, but not causing adhesions there, owing to the greater movement of that lobe.

3. Matting of the intestines by the lymph.

4. Dragging and elongating of the gall-bladder.

5. The altered direction of the organ and the impairment of all free contractile movement caused the stagnation of the bile and the subsequent formation of gall-stones.

6. Escape of gall-stones into peritoneum through an ulcerated duct near the duodenum.

7. Final attack of peritonitis.—*December* 10, 1881.

Uterine Fibroid Tumour.—Dr. Atthill said: This specimen is of very considerable interest. It was removed from the body of a woman who died in the Rotunda Hospital. She was admitted last March for profuse uterine hæmorrhage due to the presence of a very large uterine fibroid. The tumour reached to a considerable distance above the umbilicus. The sound penetrated into the uterus to a depth of more than five inches. In addition to the large mass a remarkable tumour could be felt anteriorly in the vagina. It was a small fibroid, altogether distinct from the other, which was in the upper part of the uterus. The woman was unmarried, and the cervix uteri was conical and elongated, and the os uteri very small. I divided the cervix in the first instance, partly with the view of checking the hæmorrhage and partly to be able to reach the tumour should further treatment become imperatively called for. She improved very much, and for some months menstruation was nearly normal; but she relapsed, and profuse hæmorrhage occurred. I now tried hypodermic injections of ergot without effect. I then tried inter-uterine injections of the perchloride of iron to check the hæmorrhage. For this purpose I passed through the cervix, which was now sufficiently patulous, an ordinary double catheter, such as is used for washing the male bladder; and, after washing the uterus with warm water, I injected a solution of perchloride of iron in the proportion of one part to four of water. Everything went on satisfactorily for a few days, and then there was a sudden rise of temperature and high fever, and she complained of great pain in the region of the uterus, which could be relieved only by hypodermic injections of morphia. She sank rapidly and died suddenly. The autopsy was made twenty-four hours after death. The abdominal wall was exceedingly fat. On opening the thorax the right lung did not collapse, and there was considerable emphysema. There was a large quantity of fat on the surface of the heart, and a clot in the right auricle extending into the right ventricle. The left ventricle was contracted and empty; the walls seemed hypertrophied; anteriorly the walls were over an inch in thickness. The aorta was slightly atheromatous.

The abdomen was covered with a large amount of fat. A small submucous fibrous tumour was situated between the vagina and the rectum, and another lay between the vagina and the bladder. This was very distinct during life, and gave a great deal of trouble. The cervix uteri was elongated. The cavity of the uterus proper was of considerable size; the mucous membrane lining its surface was very soft, and of a dark colour. The whole upper portion of the uterus was occupied with the enormous intra-mural fibrous tumour which, encroaching on the cavity, made it somewhat heart-shaped. This tumour measures four inches and a half in its vertical diameter, and three and a half in its transverse. In the left anterior surface of the uterus was a dark spot; the uterine wall under it, on being cut into, was found to contain a dark fluid. This apparently must have entered through some communication from the cavity of the uterus. The ovaries were healthy, the liver fatty, the gall-bladder was distended and contained one hundred and fifty gall-stones. The left kidney was fatty and pale, and its capsule easily peeled off; the spleen was enlarged—in fact the woman was a mass of disease.

Dr. Duffey said: There was no *post mortem* evidence of any peritonitis. The right lung was in a state of extreme congestion, almost approaching to acute arterialisation, and a considerable quantity of sanious mucus could be pressed from it. No doubt it was difficult to distinguish between an *ante mortem* and a *post mortem* clot; but he thought the immediate cause of death was probably the formation of the clot in the heart, added to the condition of extensive inflammation of the lung causing great interference with the circulation through the lungs. It should be remembered that to the naked eye all the organs, except the heart, presented appearances of fatty degeneration. There was great fatty deposition about the heart; but no doubt, without microscopic examination, it cannot be said that fatty degeneration was present. The contraction of the left ventricle was a contrary indication. The kidneys were in a state of extreme fatty degeneration. The pneumonia was probably septicæmic, and arose from the abscess-like cavity occurring in a myomatous tumour. It was filled with a slatish-coloured fluid, the colour of which could be distinguished now. One part of the tumour was exceedingly soft, and there were several large cavities in it; and he thought—though it could not be proved—that that portion of the tumour communicated with the left cornu of the uterus. It was possible that some of the perchloride of iron solution might have got into the peritonal cavity, and so set up the inflammation.—*December* 17, 1881.

Ovarian Cyst—Dr. Atthill said: This is an ovarian cyst which was removed from a patient in the Rotunda Hospital last Monday morning. She was admitted there about three weeks ago. The diagnosis of her case had been previously made, and it was only necessary for me to confirm it.

She was a married woman, aged thirty, and the mother of two children, the younger of whom was three years old. The tumour had grown, as far as she was aware, since the birth of her last child. On her admission the abdomen was found to be occupied by a very large tumour which was in contact with the ensiform cartilage above, and dipped down into the pelvis. The uterus was small and perfectly free. The tumour was exceedingly irregular in outline. In the larger and lower portion of the tumour the fluctuation was exceedingly distinct, while on the upper and left hand side there was a hard firm mass which was diagnosticated to be solid matter. The diagnosis of a multilocular cyst with one portion solid was made. The woman's general health was excellent, and menstruation normal. The operation was deferred in order that she might become acclimatised to the hospital, and also to allow the menstrual period to pass. Five days after this the operation was performed. We had reason to suppose there were adhesions anteriorly; there were, however, none, and the tumour was removed without difficulty. The whole tumour consisted of several cysts which had to be tapped and emptied in succession, and when finally turned out it was found that not only were there no adhesions in any part of it, but also that no solid matter properly so-called existed, the portion which had appeared to be solid being in fact a congeries of very small cysts bound down by the very dense wall of the cyst. Before the abdomen was opened I believed that there was a large mass of solid matter to be dealt with. The patient is virtually convalescent to-day.—*December* 17, 1881.

Necrosis of Lower Jaw.—Dr. Bennett said: These specimens are portions of a lower jaw separated by necrosis under conditions sufficiently remarkable. The patient is a strong healthy country girl, aged twenty-five. On the 25th of August, 1879, she was attacked with typhoid fever, and was ill for five or six weeks. On the 1st of October, when she was convalescent, her hair began to fall out, and was cut close. Her face swelled immediately afterwards, and subsequently necrosis of the whole of the alveolar portion of the lower jaw occurred. This was a sequela to the fever, and had apparently been determined by a cold, the result of the cutting of her hair. Purulent discharge made its way into her mouth, and, externally, at the angles of the jaw beneath the masseters and beneath the chin. She presented herself on the 10th of May last at the hospital, nearly two years and a half after the fever. She was a dark-complexioned girl with dark eyes, and her aspect was almost that of one suffering from malignant disease, so yellow and sallow was her colour. She looked stout and strong in every way except for her colour and the deformity about the jaw. At both the right and the left angles of the jaw the necrosed bone protruded through the skin, and could be touched with the finger. In front, underneath the symphysis of the jaw, were

two or three openings close to each other, and openings existed close to the facial artery on the right side. There were five principal openings leading from the external surface to the dead bone. In the inside of the mouth two portions of the smooth surface of the jaw above the myloid ridge, towards the back and sides, were exposed. Taking the sequestrum as it stood in the jaw we could determine, by pressure, that the mass was continuous all round. Notwithstanding two and a half years of suppuration through so many openings, every single one of her teeth was contained in the bone, and not a tooth was lost, deformed, or even soiled. A cast shows the condition of the teeth before the operation for the removal of the necrosed bone was undertaken. The cast was taken by Mr. Corbett, who assisted me in the conduct of the case. Only one tooth was removed, it being so loose that in order to take the cast it was necessary to remove it. We have here the crowns of all the teeth except the one removed. So complete was the adhesion of the gum round the crown of each tooth that it occurred to me to try if we could remove the sequestrum without removing the teeth. Mr. Corbett and Mr. Stack agreed that this was worth the trial, although it was evident that it would complicate the operation very much, as it would be no easy task to remove the dead bone, and at the same time retain the teeth. A splint accurately moulded to the teeth was first applied. When the incision was made on the middle line I divided the sequestrum in the centre and removed a very small piece of new bone which covered it. I took out the larger pieces at each side, but left a large one on the left side unmoved. The real cause of its not being capable of being moved was that it was held by the interdental splint in which the crowns of the teeth were fixed. I removed three-fourths of the sequestrum, leaving one piece with the hinder teeth on the left side. At the end of ten days I removed the splint, and was able to remove the remaining sequestrum at once. I left the whole of the incisors, canines, and three or four of the molar teeth. Looking through the openings at the angles we could see the roots of the teeth set in granulations. The principal point of interest is, that, after giving them a fair trial for some time, we found that though the teeth were adherent to the gums and perfectly alive, they were so unsupported when the gums contracted to the utmost that they were a perfect nuisance, and we had to remove them one by one until every one had been taken away. On looking through the records of similar cases I find one mentioned by Mr. Skey which behaved in exactly the same way as that which I have now mentioned. A successful attempt was made to save the teeth, and they were retained and lived for a month or two, but they afterwards became such sources of irritation from looseness that they had to be removed. The points of interest are, the late appearance of the necrosis in relation to the fever, and the fact that in typhoid or continued fever of any kind, save scarlatina and smallpox, necrosis of the

jaw is rare. The symmetry of the disease as involving the whole of the alveolar structure is a characteristic that attends this necrosis in fever. Another exceptional fact is the retention by these teeth of their vitality, and their remaining free from deposit for so long a time. Salter says that the general health of patients affected with this disease, even although there is swelling, fœtor, and profuse discharge of pus from the mouth, is not affected. This patient presented marked evidence of disease induced by the discharge and poisoning, for the mass removed stank most horribly, and it does so even now after having been disinfected by every means that I could apply. The removal of such a constant source of poison made so great a change in the woman that one could hardly recognise her in about a month after the operation. The deformity of the jaw is considerable. We were obliged to allow the gums to contract, and even to remove some portion of the bone remaining to prepare for a set of artificial teeth. The girl has been sent to the country to allow the parts to shrink. The jaw has fallen in a bit, but the body of it is safe. She can open and shut her mouth, and the openings on each side have closed, save to a very small amount, which will still require some little plastic operation by-and-by.—*December* 17, 1881.

MANIA AFTER SCARLATINA.

Cases of psychical disturbance as a consequence of scarlatina are extremely rare—two cases, as far as we know, being all that have been as yet reported. A case reported by Dr. J. Robuske (*Deutsche med. Woch.*, Oct. 8, 1881), in which a cure was ultimately effected, is therefore deserving of mention. The patient, a man aged twenty-one years, after a mild attack of scarlatina, in which there was delirium, was affected with hallucinations and subjective sensations; he could not be kept in bed, moving restlessly up and down his room, and tearing his clothes and bed coverings. This condition lasted about a week, when, under the action of chloral and morphia, he gradually improved; was willing to remain in bed and to take nourishment. A decided desquamation of cuticle occurred at about this time, accompanied by violent neuralgia of the lower extremities; after about two weeks illness in all, he recovered completely.—*Medical News*, January 7, 1882.

GENITAL REFLEX.

Dr. E. W. Saunders reports, in the *Alienist and Neurologist* for October, 1881, four cases of paroxysms of abdominal pain associated with adherent prepuce. In each case a cure followed circumcision.—*Medical News*, January 7, 1882.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, M.D., F.K.Q.C.P.

Vital Statistics

Of the Eight Largest Towns in Ireland, for Four Weeks ending Saturday, December 31, 1881.

Towns	Population in 1881 (Unrevised)	Births Registered	Deaths Registered			Deaths from Zymotic Diseases							Deaths from Phthisis	Annual Rate of Mortality per 1,000 Inhabitants
			Total Number	Under 1 year	At 60 years and upwards	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhœa		
Dublin, -	348,525	716	914	171	232	–	107	5	3	2	11	3	90	34·1
Belfast, -	207,671	459	403	64	70	12	1	2	2	4	5	13	55	25·2
Cork, -	78,361	172	169	20	43	–	5	1	–	3	7	3	22	28·1
Limerick, -	38,600	74	101	18	29	–	–	11	–	1	2	2	8	34·0
Derry, -	28,947	61	62	12	10	–	–	1	–	–	–	3	7	27·9
Waterford,	22,401	60	50	8	16	1	–	1	–	–	1	3	7	29·0
Newry, -	14,782	22	29	5	3	–	–	7	1	1	–	–	1	25·5
Galway, -	14,621	31	23	2	11	–	–	–	-	–	1	1	1	20·4

Remarks.

The death-rate was exceedingly high in Dublin and Limerick; very high in Waterford, Cork, and Derry; high in Newry and Belfast; moderate in Galway. The deaths registered during the four weeks were at the rate of 24·1 per 1,000 of the population annually in twenty large English towns, including London, in which the rate was 23·4 per 1,000; 29·5 in the sixteen principal town districts of Ireland; 19·9 in Edinburgh; 24·6 in Glasgow. Deducting the deaths of persons admitted into public institutions from localities outside the registration district, the mortality in the Dublin registration district was at the rate of 33·5 per 1,000 per annum, while that within the municipal boundary was as high as 37·8. The state of the public health in Dublin shows a great falling off. The registered deaths (914) were 270 in excess of those recorded in the preceding four weeks; the deaths due to zymotic diseases (160) were exactly double those registered in the period ending December 3, 1881, and were 15 in excess of the average number (145·0) of the corresponding four weeks in the previous ten years. A very fatal

epidemic of measles largely accounts for this deplorable result. As many as 107 deaths from this disease were registered, and 98 of the victims were *children under five years of age!* The rapidity with which the outbreak is making way may be estimated from the weekly returns of deaths, which were 11, 24, 33, and 39 respectively. It is to be noted that the epidemic has so far visited the northern districts of the city with the greatest severity. Thus the deaths were 35 in No. 3 North City District, 30 in No. 2 District, and 13 in No. 1 District—altogether 78 in the three North City Districts. It is a noteworthy fact that only 8 out of the 107 deaths from measles occurred in all the chief Dublin hospitals. Fever was not so fatal as before in Dublin. Smallpox caused 12 deaths in Belfast, compared with 3 in the previous four weeks. Scarlet fever was more fatal in Limerick, less so in Newry, where only 7 deaths were referred to this disease, against 27 in the preceding period. Of the 11 deaths attributed to fever in Dublin, 3 were returned as due to typhus, 7 as due to enteric, and 1 as due to "simple continued fever." As usually happens in cold weather, smallpox showed an increased fatality in London, where 102 deaths were referred to this disease, against 88 in the four weeks ending December 3.

As regards deaths from diseases of the respiratory organs in Dublin, a fortnight's cold weather in the middle of December had a most unfavourable effect. The total deaths were 261, compared with 172 in the previous four weeks and a ten-years' average of 210·5 in the corresponding period. They included 199 from bronchitis (average = 164·4) and 35 from pneumonia (average = 25·7). There were besides 90 deaths from phthisis, against 65 in the four weeks ending December 3. In many of the other towns also, notably in Belfast, consumption was very destructive of life.

On Saturday, December 31, the number of cases of the chief epidemic diseases under treatment in the principal Dublin hospitals were as follow—smallpox, 0; measles, 55; scarlet fever, 16; typhus, 26; typhoid, 18; pneumonia, 13.

Meteorology.

Abstract of Observations made at Dublin, Lat. 53° 20′ *N., Long.* 6° 15′ *W. for the Month of December*, 1881.

Mean Height of Barometer, - - -	29·891 inches.
Maximal Height of Barometer (at 9 a.m. of 26th), -	30·522 ,,
Minimal Height of Barometer (at 4 a.m. of 20th), -	28·820 ,,
Mean Dry-bulb Temperature, - - -	40·3°.
Mean Wet-bulb Temperature, - - -	38·4°.
Mean Dew-point Temperature, - - -	35·9°.
Mean Elastic Force (Tension) of Aqueous Vapour, -	·211 inch.
Mean Humidity, - -	85·0 per cent.

RADFORD LIBRARY

Highest Temperature in Shade (on 2nd), - -	55·6°.
Lowest Temperature in Shade (on 11th), - -	23·6°.
Lowest Temperature on Grass (Radiation) (on 13th),	22·2°.
Mean Amount of Cloud, - - - -	53·2 per cent
Rainfall (on 16 days), - - - -	1·529 inches.
Greatest Daily Rainfall (on 13th), - -	·314 inch.
General Directions of Wind, - -	W., W.S.W., S.W.

Remarks.

The beginning and the end of the month were mild, but a cold period commenced on the 7th, and lasted until the 23rd. In this way it came about that the mean temperature of the month (40·3°) was slightly below the average. The first few days partook of the characters of the weather which had prevailed throughout November—they were open, changeable, and breezy. A change to quieter and colder weather took place on the 7th—hoar-frosts occurred, and there was but little rain until the 13th, when ·314 inch fell after 9 p.m. Saturday, the 10th, was a very cold day, the highest temperature being only 32·6°; the sky was overcast with low foggy scud-cloud all day. At 9 a.m. next day the shade thermometer marked 23·9° in Dublin, and there was a beautiful rime upon the trees; during the day the thermometer did not rise above 31·0°, and the following night the lowest temperature was 19° at Parsonstown. On the other side of the Irish Sea the weather was not nearly so cold—on the 11th the lowest temperature at Holyhead was 41°, or 10° above the highest in Dublin. The weather now once more became changeable and unsettled, but remained chiefly cold. At 8 a.m. of the 18th a very deep atmospherical depression, in the centre of which the barometer was below 28·3 inches, lay between Scotland and Norway. Strong W. to N.W. winds or gales were blowing over Western Europe, and cold weather with squalls of sleet and hail prevailed in the British Isles. On the 20th and 22nd atmospherical depressions crossed Western Europe in a south-easterly direction, so that the weather remained cold in the British Isles until the 24th. From this day to the end of the month an anticyclone, with central barometrical readings at one time above 30·7 inches, lay over France, where cold, calm weather prevailed, while fresh S.W. winds were sweeping over the British and Norwegian coasts. In Dublin the partial eclipse of the moon was beautifully seen on the afternoon of the 5th. Solar halos were visible on the 13th, 14th, and 16th, lunar halos on the evening of the 30th. There was a lunar corona at 9 p.m. of the 5th. Snow or sleet fell on the 9th, 18th, and 19th; hail on the 9th, 19th, and 20th. The atmosphere was more or less foggy on eight days—viz., the 10th, 12th, 13th, 15th, 21st, 22nd, 23rd, and 27th.

RAINFALL IN 1881,

At 40, Fitzwilliam-square, West, Dublin.

Month	Total Depth	Greatest Fall in 24 Hours		Number of Days on which ·01 or more fell
	Inches	Depth	Date	
January, - - -	1·369	·868	17th	14
February, - - -	2·879	·681	9th	18
March, - - -	1·885	·383	2nd	17
April, - - -	1·329	·592	13th	13
May, - - -	1·532	·226	25th	15
June, - - -	2·666	·510	16th	21
July, - - -	1·863	·601	30th	15
August, - - -	4·739	·700	11th	21
September, - - -	1·599	·558	20th	15
October, - - -	3·470	·994	22nd	18
November, - - -	2·173	·614	27th	18
December, - - -	1·529	·314	13th	16
Total, - -	27·033	—	—	201

PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

ACCIDENTAL ANTE-PARTUM HÆMORRHAGE.

DR. EDWARD L. PARTRIDGE, of New York, Physician to the Nursery and Child's Hospital, contributes to the December number of the *New York Medical Journal and Obstetrical Review* an article in which, after briefly reviewing the current doctrines concerning so-called accidental hæmorrhage preceding the birth of the child, he boldly challenges the expediency of the practice of rupturing the membranes. He believes, first, that rupture of the membranes does not meet the indications—*i. e.*, it does not in itself or in its results offer any reasonable probability of checking the hæmorrhage; and, secondly, that the method is highly dangerous from the increase of facilities for loss of blood, and because it adds to the difficulty and danger of the proper subsequent steps in treatment. As to whether it really does check hæmorrhage, it cannot do so unless a decided decrease in uterine bulk can be secured and maintained thereby. There must, therefore, be a considerable number of cases in which, a small amount of liquor amnii being present and the reduction in size being very slight after its escape, no benefit can accrue. In cases which present an average amount of amniotic fluid,

after its evacuation the uterus is decidedly, though not greatly, diminished in size. What is to show, however, that this decrease is sufficient to close the mouths of bleeding vessels? There is no practitioner who cannot affirm that alarming hæmorrhage does often threaten after the birth of the child, and before or after the complete separation of the placenta, when the uterus is *greatly contracted.* Even this degree in the reduction of bulk fails to close the uterine sinuses in the intervals of contraction. All those writers who advise rupture of the membranes couple with this advice the information that there is danger of continued hæmorrhage. Accidental hæmorrhage usually takes place prior to or during the occurrence of infrequent and slight early uterine contractions, when the os is slightly dilated or not at all. Superadded is the condition of collapse. If the liquor amnii is now permitted to escape, can any candid, practical obstetrician admit, the author asks, that there is any known way by which a momentary reduction of uterine bulk can be maintained for a period which will check an alarming hæmorrhage? Far from meeting the emergency, the method greatly increases the dangers. If the uterus does not contract promptly and permanently after the escape of the liquor amnii, an ample space is afforded for a further extravasation of blood. A very limited space will afford room for a dangerous extravasation. Another danger is from a more extensive detachment of the placenta when the uterus is even temporarily contracted. Another objection to the early removal of the liquor amnii in accidental hæmorrhage is, that an obstacle is created to the use of the most efficient method for securing dilatation of the os—*i. e.*, by the dilators. Their use would be improper, lest, acting also as a tampon, they should prevent egress of effused blood, and add to the accumulation. A fourth danger will be from the increased difficulty encountered in the performance of version if the child is not surrounded by liquor amnii. What then should be the treatment looking toward the safety of mother and child when immediate delivery cannot be resorted to, owing to incomplete dilatation of the os? By all means *preserve the membranes intact*, and thus tampon the uterine cavity with liquor amnii. Then, in the great majority of cases, employ Barnes's dilators until the desired result is obtained. Of course, this or any similar treatment must be employed at a suitable time. It must not supersede efforts for the relief of collapse, and it may be necessary to defer all operative measures until the patient can be rallied from the alarming constitutional symptoms. The os being sufficiently dilated to enable delivery to take place, rupture of the membranes is proper, and should be followed by manual efforts to compel the uterus to descend upon the child, whose expulsion should be immediate. Version fulfils the indications better than the forceps, as by the former operation there is less danger from delay during delivery, and because it can be success-

fully resorted to at an earlier period in the dilatation of the os than the forceps can. Bimanual version should not be considered for a moment, as in cases apparently most favourable it cannot always be accomplished, while in this accident the irregularity of the internal uterine surface caused by the collection of blood would certainly interfere with the change of position of the child. During the entire time stimulants must be freely used and warmth to the surface, and in exceptionable cases, when the hæmorrhage does not appear to be continuing, it is proper to wait for returning vitality before operative measures are undertaken, lest the condition of collapse be aggravated. The danger is not necessarily over after delivery, for it is often difficult to bring about reaction from the dangerous condition, and convalescence will often be slow.

IRITIS SYPHILITICA IN ITS CONNEXION WITH THE GENERAL SYPHILITIC DIATHESIS.

Dr. J. Widder, Assistant Physician in the General Hospital of Vienna, in an article (*Archiv. f. Ophthalmologie*, Vol. XXVII., Part 2) on this subject, arrives at the following conclusions :—Syphilis does not preclude the occurrence of an idiopathic iritis. There is a specific iritis which as such depends directly upon constitutional syphilis. Iritis specifica is a local manifestation of the condylomatous stage of syphilis; it is therefore a secondary syphilitic appearance. Simple iritis is consequently only then specific, in the true sense of the latter word, when the condylomatous stage of syphilis can be objectively demonstrated. Iritides occurring in the later stages of syphilis have not as a rule the same direct connexion with the constitutional disease, and are not therefore genuine specific iritides, but, for the most part, iritides in a syphilitic individual suffering from cachexia. The iritis is no doubt due to the cachexia, but the latter cannot be regarded as specific or as differing in its character from cachexia due to other long-continued and lowering diseases. The author has seen iritis in cachexia due to typhus, abusus spirituosorum, and intermittent fever. An exception, however, must be made in the later stages of syphilis in favour of those cases of iritis where products are developed in the iris, which as such belong to the gummatous stage (true gumma), and in this way their specific nature is evidenced. Under the name of gumma of the iris, or iritis gummosa, two different syphilitic products and diseased processes are placed, which should be distinguished most carefully. One of these diseased processes, and that which is most frequently described under the name iritis gummosa, is, like the simple specific iritis, a local manifestation of the condylomatous stage of syphilis, and the tubercular neoplasm described as gumma is a secondary syphilitic product—a syphilitic papula of the iris; the diseased process itself an iritis papulosa. In contradistinction to the syphilitic papula of the iris, there is a true gumma iridis, an iritis

which belongs to the tertiary stage of syphilis (the gummatous stage), an iritis gummosa. H. R. S.

THE NERVOUS SYMPTOMS OF LITHÆMIA.

Among the subjects which have been of late more clearly recognised is that of lithiasis or lithæmia. Able researches have done much to direct the attention of the medical mind to it, and the outcome is that it is now distinctly known that a state exists which is closely allied to gout, a half-gout that does not bring with it the inflammation, pain, and obvious swellings of the gouty paroxysm, but which works more silently, is characterised by the abundance of lithic acid or lithates in the urine, frequently coexists with signs of ill-assimilation of food, and with aches and pains unaccompanied by any perceptible changes of the aching part. Hepatic derangement is also often found; and from this end of the chain the links are stretched through many vague, almost nameless, symptoms to outbreaks of true gout, or to structural changes in heart, vessels, and kidneys. To the peculiar, often obscure, nervous symptoms arising from this condition of the blood, attention is pointedly directed by Prof. Da Costa, in a clinical paper on the "Nervous Symptoms of Lithæmia," in the number of the *American Journal of the Medical Sciences* for October, 1881. One of the most prominent symptoms, according to Da Costa, is vertigo. This, properly speaking, is not the *vertigo à stomacho læso* of Trousseau, although gastric derangement may be associated with it, having but little connexion of a direct character; or one may exist independently of the other, as well as of the more obvious symptoms of lithæmia. Each symptom of the disease is carefully studied by Dr. Da Costa, and the salient points in the clinical history are illustrated by a number of original cases. In the treatment the correction of the state of the blood is of primary importance. Careful regulation of the diet, reducing both nitrogenous elements and hydrocarbons, forbidding alcoholic drinks, and allowing plenty of water, while systematic exercise, especially in the open air, and due attention to the state of the skin, are all essential. Medicines favouring excretion, purgatives, especially the natural mineral waters, which, at the same time, are diuretic, are to be preferred. Citrate of lithium is particularly serviceable, iodide of potassium and colchicum less so; while remedies having a direct action upon the nervous system, as Da Costa points out, are to be avoided or used very sparingly, and, as a rule, to be reserved for special occasions.

HÆMORRHAGE INTO THE VENTRICLES OF THE BRAIN.

The symptomatology of primary, intermediate, or direct hæmorrhage into the cerebral ventricles has been carefully investigated by Dr. Edward Sanders, of New York, from an analysis of the clinical histories of ninety-four cases which he has diligently collated. The results of the

study form an important contribution to the literature of this little-known subject, and are published in the October (1881) issue of the *American Journal of the Medical Sciences*. The premonitory symptoms, as indeed those of onset, do not differ materially, where the effusion takes place primarily into the ventricles, from those of ordinary cerebral hæmorrhage. Cephalalgia is the most common and constant of the premonitory symptoms, and may have existed for a long time; dizziness is less frequently observed. The attack may be immediately fatal, or it may be ushered in by convulsions, by paralysis without loss of consciousness, by paralysis with partial or complete loss of consciousness, or by partial or complete loss of consciousness without paralysis; the latter being the most frequent mode of onset met with in primary intraventricular hæmorrhage, at least in this particular series of cases. The symptoms are elaborately considered. As regards the leading phenomena and their significance, it is stated that coma, whether light or profound, is to be considered "as a constant symptom of primary intraventricular hæmorrhage." As regards motor disturbances, no direct relation can be traced between the seat, amount, and extent of the ventricular extravasation and the presence or absence of muscular contractures, and the greatest variation is noticed in different cases in the amount, persistence, permanence, or tetanic characters of the spasm. Sanders says in regard to general clonic convulsions, that he believes them to be "one of the most important and frequent symptoms of immediate ventricular extravasation." This may be attributable to direct injury from the effusion, or to its pressure upon adjacent motor centres. A careful comparison of simple and complicated cases, however, shows "that the variety or extent of the complication has no essential bearing in the occurrence of convulsions, the ventricular extravasation itself being undoubtedly the inducing cause." The *tache cérébrale* also may be present. Where apparent improvement takes place, it is generally soon followed by symptoms of the most aggravated kind terminating in death, no second remission having been observed in a single case.

THE ELECTRIC LIGHT AND THE EYES.

In a paper read by Prof. Javal before the Society of Public Medicine (*Annales d'Hygiène*, December, 1881), it is stated that the electric light is perfectly harmless to the eye. The greater number of cases of asthenopia are met with in persons who work with an insufficient amount of light; and the electric light will, in its near approaching generalisation, do great service by raising the standard of illumination now prevalent. What is required is a considerable increase of domestic lighting, the effect of which will certainly preserve from myopia and certain other affections numerous eyes, the visual acuity of which is imperfect, and which suffer considerably when forced to work in the semi-obscurity of our modern lamps.—*Med. Times and Gaz.*, Jan. 28, 1882.

In Memoriam.

REUBEN JOSHUA HARVEY,

M.D., Univ. Dubl.; F.K.C.P.I.

Died December 28th, 1881, aged 36 years.

"Ον οἱ Θεὸι φιλοῦσιν ἀποθνήσκει νέος.—Menander.

"Whom the Gods love dies young."

The year 1881 has seen the removal of many of the Medical Profession more immediately connected with this city—Hamilton Labatt, Edward Peele, Robert Cryan, Sidney Murdoch, Alexander Carte, Alfred M'Clintock, Thomas Hayden, Philip Bevan, and, on 28th December, Reuben Harvey.

Dying on the tenth day of petechial typhus, he adds another name to the long and honoured list of those who have succumbed to infectious disease, caught in the discharge of their duty. Fresh in the memories of most of us are the deaths from typhus of Robert Mayne, April 7th, 1864, aged fifty-three; Henry Eames, March 24th, 1873, aged thirty-one; Edward Peele, February 18th, 1881, aged forty-three. Each of these was mourned and missed, as well he deserved to be; it is, perhaps, because the most recent wounds bleed the most freely that our feelings are so severely wrenched by the premature loss of Reuben Harvey. Those who had lately met him, abounding with hearty energy and vivacious elasticity, would have predicted for him a longer than average life of usefulness, *sed Deo aliter visum;* and, with Origen, we must exclaim—"*Quam inscrutabilia sunt Dei judicia!*"

Reuben Harvey entered Trinity College, Dublin, in 1862; obtained a non-foundation Scholarship in Mathematics in 1865, and in the following

year won the third gold medal in the same subject at the Moderatorship Examination for the degree of Bachelor of Arts. He then devoted himself to the study of medicine. In 1868 he won the first Medical Scholarship, and in Michaelmas Term, 1870, obtained the degrees of Bachelor of Medicine and Master in Surgery. Soon after he proceeded to the Medical Schools at Vienna and Würzburg, where he studied under Professors Stricker and Recklinghausen. On his return to Dublin he was attached as Demonstrator in Anatomy to the School of Physic in Trinity College, Dublin, and, after some time, he connected himself with the Carmichael School of Medicine, then situated at the north side of the city. With this flourishing seat of learning the genius and energies of Dr. Harvey were completely identified. For several years he filled the important post of Registrar, for a longer period that of Lecturer on Physiology. He was the moving spirit in the important step of its transfer from the north to the south side of the city. Dr. Harvey was elected a Fellow of the King and Queen's College of Physicians on October 18, 1879, and twelve months afterwards he was chosen a Censor of the College.

Reuben Harvey was candid, straight, and honest; fearlessly unswerving from what he held to be a right course. When he had made up his mind a thing was right to be done, and could be done rightly, he was not to be turned from his purpose—there was no compromise to be made with him about it. That he was a useful man is shown by his having a seat on the Councils of the Medical Society of the College of Physicians, of the Pathological Society of Dublin, of the Biological Club, of the Dublin Branch of the British Medical Association, to which places of trust he was elected by men who knew well who and what he was.

The School of Practical Physiology, just now raising its head in Dublin, could but ill afford to lose in its infancy such an experienced nurse and munificent promoter as Dr. Harvey. Living chiefly for this one branch of medical science, sacrificing to it every power, every pleasure, every

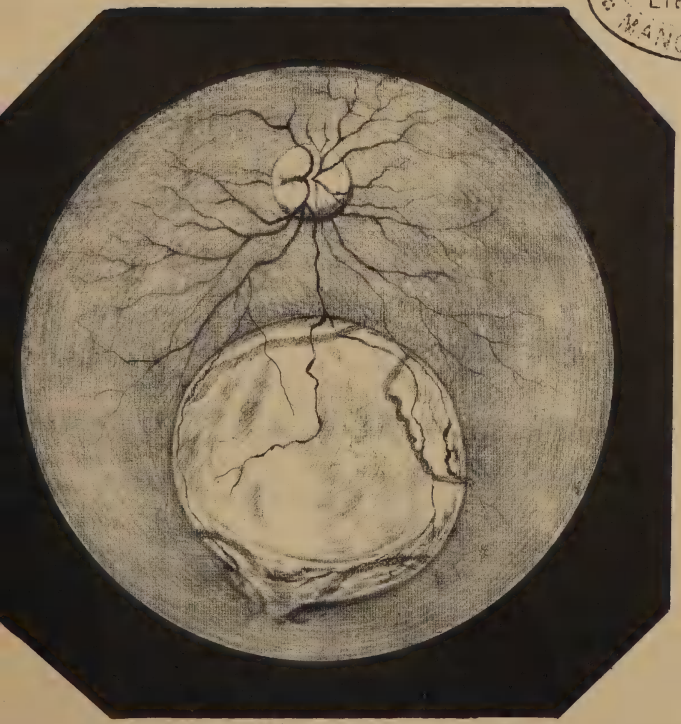
moment, he occupied himself with any others only in so far as they acted as a foil to his one favourite pursuit—the teaching of physiology. He was fortunate, owing to external circumstances, in being able to be indifferent to the interests of professional gains—the paramount object of all small intellects. He was indifferent to it because its loss was certainly made good to him tenfold in the enjoyment of the deep delight of following his favourite object, and in the charming recreation which springs from the pursuit of truth. Never had a career opened with more ample promise, never did the buds of genius seem more firmly set. Dowered with the triple gifts of intellect, industry, and independence, Reuben Harvey seemed to be marked out as one of those illustrious few who are destined to occupy one of the thrones of science. Hence it was that when all that is of culture and light among his brethren stood round his open grave on the closing day of the past year, it was difficult to repress something of the emotion of revolt at the fact of his removal—a removal which seemed so untimely, and so weird a criticism on the theory of the survival of the fittest, for never did the enigma of their *non*-survival appear more insoluble.

Dr. Harvey was too deeply engrossed with the practical duties of his favourite science to appear much in print. Among his literary works may be mentioned the translation in von Ziemssen's Cyclopædia, Vol. VIII., of the articles on "Diseases of the Peritoneum," and on "Diseases of the Suprarenal Capsules;" a "Note on so-called Compensatory Emphysema in Thoracic Diseases," *Dub. Jour. Med. Science*, Vol. LXVI., p. 509; articles on "The Histology of Tendon," *Irish Hospital Gazette*, 1873; "Report on Physiology," *ibid.*, 1874; "Ueber die Zwischensubstanz der Hoden," *Centralblatt*, 1875, and numerous contributions to the Proceedings of the Pathological Society and of the Dublin Biological Club.

"*Quis desiderio sit pudor aut modus*
Tam cari capitis?"—Hor. Carm., I., xxiv.

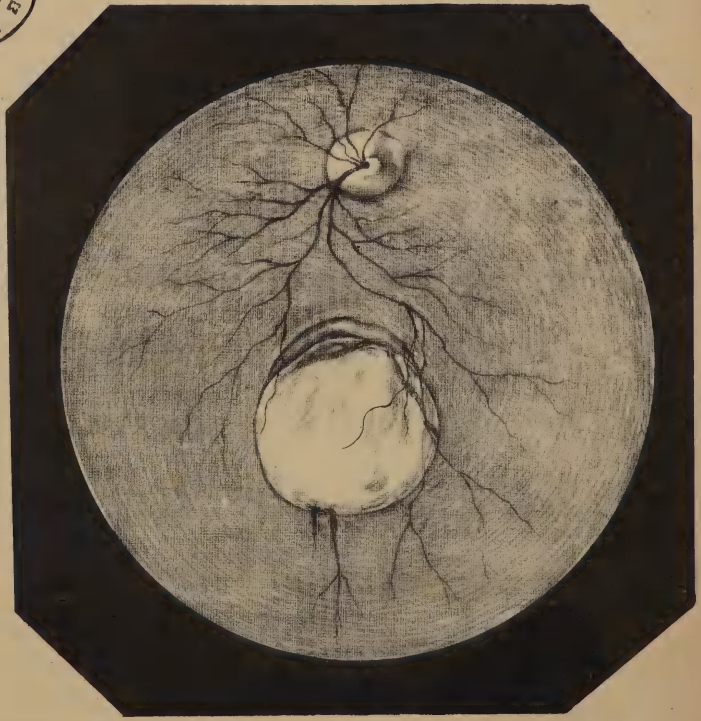
A. W. F.

RADFORD
LIBRARY
MANCHESTER



J. H., AGED 13.—RIGHT EYE.

(Drawn from Inverted Image.)



J. H., AGED 13.—LEFT EYE.

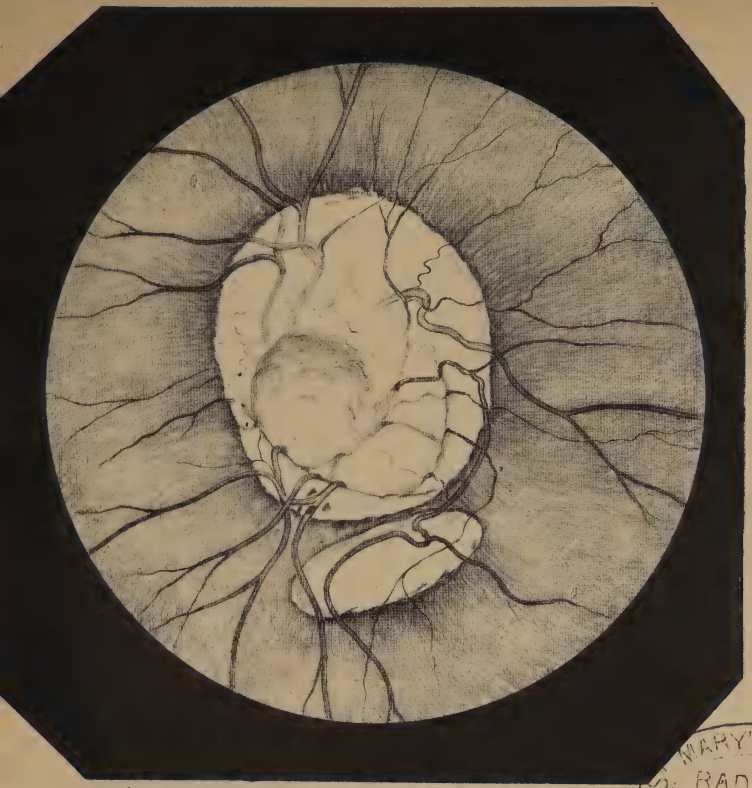
(Drawn from Inverted Image.)

DOUBLE COLOBOMA OF CHORIOID.

(Drawn from life by S. T. KNAGGS.)

B. M., AGED 13.—RIGHT EYE.

B. M., AGED 13.—LEFT EYE.



ST MARY'S HOSPITAL
RADFORD
LIBRARY
MANCHESTER

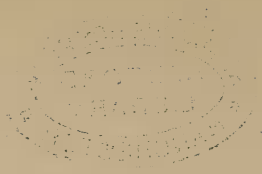
COLOBOMA OF CHORIOID AND OF RIGHT OPTIC NERVE SHEATH.

(*Erect Image.*)

COLOBOMA OF LEFT OPTIC NERVE SHEATH.

(*Erect Image.*)

(*Drawn from life by* ARTHUR H. BENSON.)



ST. MARY'S HOSPITAL
RADFORD
LIBRARY
MANCHESTER

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

MARCH 1, 1882.

PART I.

ORIGINAL COMMUNICATIONS.

ART. VII.—*On Coloboma of the Chorioid and of the Optic Nerve Sheath.*[a] By ARTHUR H. BENSON, M.B., F.R.C.S.I.; Assistant Surgeon, St. Mark's Ophthalmic Hospital; Lecturer on Ophthalmic and Aural Surgery in the Ledwich School of Medicine.

THE cases of maldevelopment of the internal tunics of the eye which I have the honour of exhibiting to the Medical Society are of interest, not alone from their extreme rarity, but also from an embryological and practical point of view.

All maldevelopments or arrests of development help to teach us the mode of development, or at least serve as useful means of correcting theories and conclusions otherwise deduced. To the practical physician also it is of importance to remember that such malformations do occur, in order that he may not mistake them for the effects of disease, and perhaps suggest treatment which must fail to benefit.

Both cases were discovered whilst assisting my friend, Dr. Fox, of Philadelphia, to examine, for statistical purposes, the eyes of the deaf-mutes in the institutions about Dublin. Both are deaf and dumb—the boy being an inmate of St. Joseph's Male Asylum at Cabra, and the girl of St. Mary's Asylum, also near Cabra. Neither was known to have anything amiss with the eyes until

[a] Read before the Medical Society of the King and Queen's College of Physicians, Wednesday, February 1, 1882. [For the discussion on this paper see page 226.]

we discovered the colobomata. The following are the notes of the cases:—

Case I.—J. H., aged thirteen, otherwise fairly well developed and intelligent, was admitted into St. Mark's Hospital in October last. There is nothing remarkable about the external appearance of the eyes; in both the iris is normal in shape, and acts well to light and accommodation. The tension also is normal, and the lens is clear. On examining with the ophthalmoscope the media are found to be perfectly transparent, the disc is normal in shape and colour, with considerable pigmentation round its border, and the general fundus is also normal, though slightly mottled. The refraction is hypermetropic to the extent of two diopters. R., V.=$\frac{6}{12}$??; L., V.=$\frac{6}{9}$???.

However, on investigating the condition of the inferior segment, a large, almost circular, white patch with pigmented borders is seen occupying a position below and somewhat to the inner side of the disc in each eye, and about midway between it and the ciliary body. It is larger in the right eye than in the left, but the positions are symmetrical. Retinal blood-vessels are seen running over the surface of the patches, the edges of which are elevated and darkly pigmented in places. As these vessels, which can be traced directly to the central vessels of the disc, cross the border of the coloboma, they give a sudden bend as over the edge of a steep glaucomatous cup. The floor of the coloboma is myopic to the extent of two diopters, making the difference between the level of the general fundus and the colobomatous area equal to four diopters, or one millimetre in antero-posterior measurement.

In the right eye the inferior border of the coloboma is somewhat pointed and not evenly pigmented; the floor of the coloboma is pearly white, with a few faintly pigmented patches scattered over it. The chorio-capillaris seems to encroach a certain distance over the pigmentless area of the coloboma. In the left eye the inferior border is evenly curved, but at its most inferior portion a good-sized vessel bends round its margin, and runs towards the periphery of the fundus. This vessel cannot be traced over any portion of the coloboma, but on the retina its margins for some distance are marked by a line of black pigment. I regard it as an errant ciliary vessel, such as is not infrequently seen even in normal eyes, running to supply some portion of the retina.

The field of vision tested with Förster's perimeter is of almost normal extent in both eyes, but the acuity of vision is considerably impaired in the upper portion of each. No definite scotoma could be made out, but the boy said that the test object (a piece of white paper one centimetre square) was not so distinctly seen above as it was below or at the sides.

The difficulty of taking an accurate perimeter chart in a deaf and dumb boy is considerable, and would have been insuperable

but for the kindness of the Rev. Mr. Ennis, of the Institution in Cabra, who came to St. Mark's Hospital and made the boy very fully understand what was required of him, and interpreted his signs to me.

Case II.—B. M. is a rather ill-developed and not very intelligent child, aged thirteen, deaf and dumb from her birth. All her brothers and sisters speak and hear normally. External examination of her eyes fails to discover any anomaly of the iris or other portions, and the media are clear; tension is normal, and vision in the right eye is about $\frac{6}{12}$, and in the left the same. The ophthalmoscope reveals a high degree of hypermetropia—viz., four diopters in the fundus of each eye. The chorioid and retina are normal, or perhaps unduly mottled in the periphery; but the appearance of the disc-region is truly remarkable.

In the right eye no disc, properly so called, can be made out, but in its place a large white, irregularly depressed funnel can be seen, from the lip of which the retinal vessels seem to take origin, and over the edge of which they bend sharply, as in a glaucomatous cup. This appearance is best marked below, the superior lip not being so abruptly terminated, but gradually receding on an inclined plane from the level of the healthy fundus into the deep excavation below. Tracing the large retinal vessels we find that above they pass over the pigmented edge of the coloboma without undergoing any sudden change in direction. Following them on, they gradually get more and more indistinct until they are finally lost in the depths below. Those to the lower outer side pass suddenly from view, disappearing as over the edge of a precipice, whilst those from the lower inner side, passing over the pigmented border, without change in appearance, run for a short distance and then suddenly disappear, again to become visible, but dimly, on a lower platform, where by their direction and size they can be recognised as continuations of the above. These again bending sharply over the edge of the ledge on which they run, also disappear into the hidden depths. The area of this pigmentless disc-region is about six times the size of the normal papilla.

Just below and to the inside of this disc-region, and separated from it by a narrow isthmus of fairly healthy fundus, is seen an unpigmented oval patch about one-fifth its size. This patch closely resembles in its appearance the patches seen in the eyes of the boy first mentioned. Over its surface, which is somewhat depressed below the level of the surrounding retina, several good-sized retinal blood-vessels run; its borders are slightly pigmented in places, but its surface is entirely devoid of pigment, and presents the pearly white appearance of the sclerotic. In its centre this patch shows a depression corresponding to a difference in refraction of three diopters as compared

with the surrounding retina. Calculating, then, that four diopters of refraction correspond to one millimetre in antero-posterior measurement, we find that this inferior coloboma is depressed three-quarters of a millimetre, and the upper coloboma of the optic disc has a depression of about two millimetres in its centre, judging by the position of the fine vessels which ramify over the pearly or opalescent membrane which seems irregularly to cover its floor, leaving still deeper holes behind. This membrane is probably retinal in origin.

The left eye, like the right, is strongly hypermetropic (4 D.), and the fundus is everywhere mottled. In it, too, the disc is entirely abnormal, being about twice its ordinary size, and instead of being circular, or evenly oval, it is peaked at its inferior extremity, making it more or less pear-shaped. As in the right eye, its surface is unevenly depressed; the vessels from above gradually disappear, whilst those from the inferior segment suddenly disappear over the edge of the precipice to be no more visible.

The depth of the depression here, estimated in the same manner as in the right eye, is about one millimetre.

There is no inferior coloboma in this eye, but in its place, and running downwards and inwards, is an irregularly pigmented band, with an ill-marked median line, suggesting the idea of a raphé or junction-line.

The field of vision in this case I also attempted to test with Förster's perimeter, but without success, as the child's education is not sufficiently advanced to enable her to understand the signs, &c., of such complex ideas as those necessary to explain what was required of her.

The accompanying drawings serve to illustrate the peculiarities in each case.

Through the kindness of my colleague, Mr. Story, I am enabled to show the drawing made by Dr. Knaggs, of Sydney, of a case (M. D.) of double coloboma of the chorioid and iris, which was under his care in St. Mark's Hospital last year. The right lens was cataractous, so that the condition of the chorioid and retina in that eye could only be conjectured; but in the left eye there was a very large pigmentless area, embracing the optic disc above, and reaching to the ciliary body below, where it joined with the split in the iris. The disc margins were very badly defined; the fundus was dark, and therefore contrasted the more vividly with the glistening white of the colobomatous area, over which retinal vessels freely ramified. The field of vision was everywhere restricted, but especially above, where it reached only to 23°. T. n., V. = fingers at 4 metres.

"Coloboma of the chorioid" is the name by which the affection

is most generally known, and which, therefore, I have retained, but only under protest, as the term is so loosely used to express widely different conditions.

Before going further, I may, perhaps, be permitted very briefly to sketch in outline the mode of development of the essential structures of the eye, so that the description of the cases may be the more readily followed.

Very early in the development of the embryo a protrusion forwards occurs on either side from the anterior primary encephalic vesicle. This prolongation or expansion, the so-called "primary optic vesicle," forms a hollow pedunculated chamber, communicating by its stalk with the general ventricular cavity of the primitive brain. As soon as the lens begins to develop by an involution of the cuticular epiblast, the anterior inferior portion of the primary optic vesicle becomes doubled back on itself, so as to form a cup-like depression, the "secondary optic vesicle" or "optic cup."

The superficial fold, or that towards the brain, rapidly diminishes in thickness, and produces only a layer of pigment cells, the so-called chorioidal, but, as we see, more properly named retinal pigment; the deeper fold, at the same time, increases in thickness, and forms the various elements of the future retina, whilst the pedicle becomes the optic nerve. The space which exists between the doubled back junction border of the two folds is the "ocular fœtal fissure." Through this the mesoblastic elements gain entrance into the interior of the globe to form the blood-vessels and vitreous humour. This fissure extends back into the pedicle for a certain distance, thereby permitting the entrance of the central artery of the retina into the interior of the optic nerve. The closure of the fœtal fissure normally takes place about the seventh week of intra-uterine life, whilst yet the mesoblastic coverings, the chorioid and sclerotic, are still in a soft and very rudimentary condition. It is with this fissure and its closure, or mal-closure or non-closure, that we mainly have to do in explaining the mode of origin of such malformations as those before us. The iris, which, according to Manz (Graefe and Sæmisch's Handbook), does not begin to develop until about the same time as the split in the secondary optic vesicle completes its closure, is partly derived from the anterior lip of the optic cup, and partly from the chorioid proper. It is normally developed without a fissure, as is the chorioid itself. If this be true, it is manifestly incorrect to speak of coloboma of the iris or chorioid as an arrest of development,

since such conditions exist at no period of normal embryonic life; they should rather be spoken of as malformations or maldevelopments. But opinions differ on this point, some observers having stated that they could see the split, even with the naked eye, in the embryo chick of five days.

For very many years a malformation of the iris in the form of a V-shaped gap or split—the apex of the split being at the ciliary border, the base at the pupillary edge—has been noted as a congenital condition, and described as "coloboma of the iris." But it was not till long afterwards that Von Ammon, for the first time, observed a deficiency in the posterior tunics of the eye in conjunction with the iris split. As Burckhardt Wilhelm Seiler, in his work on "Malformations of the Eye," page 44, published at Dresden in 1833, says:—"The split of the chorioid (coloboma chorioideæ) and of the retina, which, during the development of the eye, normally exists in the embryo, has been found by Von Ammon (Zeitsch. f. d. Ophthalmologie, I. B. S. 58) in an adult as *an arrest of development* (Bildungshemmung) in conjunction with coloboma of the iris."

It would be tedious, and not very profitable, to go over *seriatim* the various opinions held by eminent authorities as to the nature and cause of the anomalous condition of the fundus oculi discovered by Von Ammon. The theory of its genesis held by its discoverer, and, until lately, by almost all observers, seems to have been based upon notions of the history of the development of the human eye, the correctness of which has since been questioned. To them the anomaly was simply one of arrested development analogous to hare-lip or cleft-palate.

Anatomical and microscopical examinations of colobomatous eyes have, however, demonstrated, in many cases, the presence of retina, more or less perfect, over the colobomatous areas; and Dr. Hermann Pause, in Graefe's "Archives of Ophthalmology," 1878 (Vol. XXIV., Part 2), relates a case in which he examined microscopically the colobomatous eye of a new-born child, and found in the region of the coloboma "the retina, with all its elements, continued in the same order as in the normal membrane—neither a thinning nor a stretching of the individual components, nor even the presence of heterogeneous elements. Further, there was no abnormal adhesion with the chorioid, which was itself quite normal throughout; in particular, neither the elastic lamella nor the chorio-capillaris were

wanting." Even the pigment epithelium was present, but devoid of pigmented matter, so that the only abnormal condition found was a "leucosis of the pigment epithelium" of the retina over the affected area. Other investigators have found complete absence of retina and chorioid in the region of the coloboma, whilst Manz, in his article on Malformations of the Human Eye, in Graefe and Sæmisch's Handbook, states :—"The rule is that within the coloboma the retina is completely wanting" . . . . and that "besides this constant defect, the elastic lamella and the chorio-capillaris are usually absent—structures which belong to the chorioid proper, and have no connexion with the fœtal fissure." A simple arrest in the closing process of the secondary optic vesicle is, therefore, insufficient to account for these various anatomical conditions, and we must seek for other factors in their production.

To quote Manz again, there are three factors which in coloboma of the bulb are of importance, although not to the same extent in all cases—(1) a disturbance in the closing process of the fœtal eye-split; (2) a secondary disturbance in the development of the tissues derived from the cephalic plates which envelop the eye (viz., chorioid and sclerotic); and (3) an ectasia of the resulting cicatrix and of the neighbouring structures, the result of intra-ocular pressure. The contraction of the cicatricial tissue with which the fœtal fissure gets closed may have considerable effect in diminishing the size of the area, at first devoid of retina, and may account for many of the anomalous microscopical conditions described by authors.

As to the nature of the disturbance which primarily affects the closure of the fœtal fissure we know nothing more than that it must come into operation before the seventh week of embryonic life, for that is the time at which the secondary optic vesicle closes. There is, however, some evidence in favour of its being inflammatory—for example, the close adhesion which often exists between all the structures at the margin of the coloboma, and, usually, over its entire area.

On this hypothesis we can easily imagine how the inflamed vitreous pedicle (the mesoblastic intrusion into the secondary optic vesicle) would offer considerable resistance to the closure of the fissure, since it is necessary that this pedicle should be cut through before the edges could approximate closely.

Normally the closure of the fœtal fissure takes place from behind forwards and from above downwards, commencing at the

optic nerve and terminating at the ciliary body, so that the *position* of the posterior edge of the coloboma may guide us in determining the *period* of intra-uterine life in which the disturbance took place, and the *size* of the affected area may indicate the *degree* of disturbance which existed in each case.

According to this theory coloboma of the optic nerve sheath indicates an earlier disturbance than coloboma of the chorioid, and the more anterior the coloboma the later the period of disturbance. Anophthalmos and extreme microphthalmos are, probably, in many cases, the result of early and extensive coloboma of the optic nerve sheath.

Coloboma of the optic nerve sheath, as seen in B. M., is an extremely rare affection, and when combined, as it is in her right eye, with a distinct and separate coloboma of the bulb, and in her left eye with a raphé-like disturbance of pigment in the line usually occupied by bulbar colobomata, it must be regarded as entirely unique.

A. Nieden, of Bochum, in his article on Coloboma of the Optic Nerve Sheath in *Knapp's Archives of Ophthalmology*, December, 1879, describes four cases of the affection, in the largest of which the colobomatous disc was only three times the normal size, whereas in B. M.'s right eye the colobomatous disc is, at least, six times as large as any normal disc.

Time would fail me to dwell upon the many interesting questions which such cases as these suggest—how far the refraction of the eye is influenced by the coloboma, and how far the coloboma is affected by the primary inclination of the globe to hypermetropia or myopia. A majority of, perhaps all, colobomatous eyes are primarily hypermetropic, but many develop axial myopia from subsequent stretching of the globe backwards; or what part (an important one, I feel sure) is played by heredity; and how far such maldevelopments are associated with maldevelopments elsewhere. But before closing I may be permitted to allude to the interesting monograph lately published by Dr. Van Duyse, of Gand, on Coloboma of the Eye, and its connexion with Congenital Serous Cysts of the Orbit, in which he shows that these congenital serous cysts of the orbit, which occur either in anophthalmic or microphthalmic patients, and for which the surgeon is at times called on to operate, frequently have their origin in a coloboma, the weakened floor of which yields before the increasing intra-ocular pressure.

Considering the rarity of coloboma of the eye, it is remarkable that amongst about 500 deaf-mutes in the Dublin asylums there should be found two double cases; but, of course, the number is too small to draw any firm conclusions from regarding the connexion of coloboma and deaf-mutism. This subject, amongst others, is being worked up by Dr. Fox, for whose statistics I helped to examine the mutes in Dublin.

In the cases at present before us we have, then, a very remarkable series. Some of the conditions visible in them are such as I have failed to find mention of in any of the works on the subject which I have been able to consult.

To summarise:—(1) In M. D. we see a double coloboma of chorioid and iris of enormous size, and embracing also the optic disc. (2) In J. H. we see a double coloboma of the chorioid without implication of disc or iris. (3) In the right eye of B. M. we find an enormous (by far the largest on record) coloboma of the optic nerve sheath associated with, but separate from, a very small coloboma of the chorioid; (4) and in her left eye a smaller coloboma of the optic nerve sheath, without coloboma of either chorioid or iris, but in the position of the junction of the lips of the fœtal fissure a disturbance of the pigment layer, suggesting the idea of a raphé, where the trouble just stopped short of the production of a coloboma.

From these conditions I think we may conclude:—

I. That coloboma of the chorioid may exist without corresponding coloboma of the iris, though Nettleship in his work on "Diseases of the Eye" seems to doubt this, for he says (page 166) "Coloboma of the chorioid is seldom, *if ever*, seen without coloboma of the iris, though the two are not always of proportionate size."

II. That the closure of the fissure or furrow in the pedicle (optic nerve) takes place independently of the fœtal fissure in the optic cup.

III. That the fissure may (1) close in the optic nerve and remain open in the bulb, as seen in the case of J. H; or (2) may close in the bulb and remain open in the nerve, as in B. M.'s left eye; or (3) may remain open in both bulb and nerve, closure having taken place in the interval between the two colobomata, as in the right eye of B. M.

ART. VIII.—*The "Patellar-Reflex" Phenomenon, with Illustrative Cases.*[a] By JOHN W. BYERS, M.A., M.D.; Physician to the Hospital for Sick Children, Belfast.

IN the year 1875 two celebrated German observers, Westphal and Erb, directed the attention of the profession to the great value, from a medical point of view, of a phenomenon long known as a schoolboy's trick. I refer to the peculiar jerk of the leg which takes place when the patellar tendon is struck. Charcot may have used the patellar-reflex in diagnosis before this period, but undoubtedly the profession at large was first made aware of its importance by the appearance of the papers of Westphal and Erb.

Since then the phenomenon has been studied with extraordinary care in its physiological, pathological, and clinical bearings by Westphal, Erb, Tschirjew, Burckhardt, Fürbinger, Schultze, Berger, Eulenburg, Charcot, Brissaud, and Franck on the Continent, and in this country by Grainger Stewart, Hughlings Jackson, Waller, Buzzard, and Gowers; so that, I think, no one will accuse me of exaggeration when I say that there are few symptoms of greater importance in the diagnosis of diseases of the nervous system than this patellar-reflex phenomenon, especially when it exhibits deviations from its normal condition.

The phenomenon has received many different names; it has been called "the patellar-tendon reflex phenomenon," "the knee-jerk," "the knee-reflex," the "knee phenomenon."

In this paper I shall—First, describe the phenomenon as it exists in a healthy individual, and mention several methods that may be employed to elicit its presence. Secondly, I shall state and examine the different views that have been propounded as to its physiological causation. Thrdly, I shall read the notes of a series of cases in which this phenomenon exhibited deviations from its normal condition, and I shall attempt in each case to account for such alteration.

First. You see in my friend [one of the hospital pupils] who is sitting with his right leg crossed over the left, and bent at an angle slightly greater than a right angle, that when, with this stethoscope, which has an india-rubber ring round the pectoral piece, I strike the right leg just below the patella, immediately the foot is jerked forwards. Such is the phenomenon, and such is the ordinary method of testing for its presence.

The following plan is suggested by Buzzard if it is desired to

[a] Read before the Ulster Medical Society, January 31, 1882.

ascertain the mere presence of the "patellar-reflex:"—"The patient, who is seated, plants his foot firmly down at such a distance that the leg forms a little more than a right angle with the thigh. Whilst the observer rests the palm of his left hand upon the patient's thigh, he strikes with some implement held in the right hand several blows upon the ligamentum patellæ at about an eighth of an inch or so below the knee-cap. The quadriceps muscle can be felt, and (if the patient is in masculine garments) can be seen to contract more or less vigorously in response."

The side of the hand can be employed as a percussor. If no response follows the blow the leg should be bared, and the observer should test most carefully by striking in the usual place, or on the patella, or the tendon above the patella, or the muscle itself, before assuming that the reflex is absent.

In children, in whom there is often considerable difficulty in examining for the sign, I usually place them on a table with their legs hanging over the side, and while their attention is occupied in looking at a toy, a light tap on the patellar tendon is usually sufficient to demonstrate the presence of the phenomenon. The patellar-reflex is almost always present in health, although the amount of the contraction of the quadriceps muscle may vary at different times even in the same individual. Berger has examined 1,409 soldiers for this phenomenon, and has found it absent in 22, or 1·56 per cent. of these cases.

Although I have seen the patellar-reflex slight in several individuals, and absent in one—while in none of these when examined was there any evidence of disease—still I think that such cases are exceptional; and I am inclined to believe that the greater the care that is taken in testing for the sign the fewer will be the number of those in whom it is found to be naturally absent. With reference to those cases in which it is stated that the phenomenon is normally absent, it is of little importance, as Westphal thinks, to note in the case of any one that at a given time the patellar-reflex is absent, more especially if we know nothing of his history. The observation would be of much greater value if we could show that the phenomenon *had* disappeared. In some of these cases the absence of the patellar-reflex may be a premonitory sign of a spinal affection of which other symptoms will appear in the future. Again, in certain individuals the absence of the phenomenon may be owing to mechanical causes, Westphal having shown that it is difficult to develop the patellar-reflex in those in whom the tendon

is very short, in those in whom there is a thick pad of fat under the tendon, and in those who are very stout.

Secondly. We shall now consider the physiological causation of the phenomenon. Two views have been suggested to account for it. According to one it is purely reflex—that is to say, that at the point where the observer strikes the leg, impulses are generated which travel up the sensory nerves to the cord, at about the level of the second and third lumbar nerves, and there undergo certain changes, of whose nature we are ignorant—except that as a result efferent impulses descend the anterior crural nerve to the quadriceps muscle, causing it to contract and to jerk forward the foot. According to the other theory the phenomenon is a local one, due to a direct irritation of the quadriceps muscle.

In support of the first view, advanced originally by Erb, and according to which the reaction is of the nature of a spinal reflex, evidence is forthcoming from two sources—(*a*) the experimental, and (*b*) the pathological.

(*a.*) As a result of experiments on animals (Fürbinger, Schultze, Tschirjew, Senator), in many of whom the patellar-reflex exists, it has been found that destruction of the portion of the cord in the lumbar region, with which the anterior crural is connected, or of the anterior or posterior roots of the spinal nerves in the same situation, or of the nerves to the muscle, is followed by a disappearance of the phenomenon.

(*b.*) In any disease in which the reflex nervous arc, at the situation mentioned, is injured, in either its sensory or motor portion the patellar-reflex is lost. This is exemplified in tabes dorsalis (Case I.), and in poliomyelitis anterior acuta (infantile paralysis) (Case III.)

In favour also of the reflex theory is the fact that drugs which increase the irritability of the cord—*i.e.*, strychnia, cause an exaggeration of the patellar-reflex; thus Eulenburg, in some cases in which the phenomenon seemed entirely abolished on one side, succeeded in making it reappear for some time by the hypodermic injection of strychnia, made in the neighbourhood of the nervus cruralis, or into the substance of the extensor muscles. On the other hand, medicines, such as bromide of potassium and opium, which diminish the irritability of the cord, lessen the activity of the phenomenon. Admitting, then, that the contraction of the quadriceps is of reflex origin, the question naturally arises—From what point do the sensory impulses arise when the leg is tapped;

is it from the skin, the patellar tendon, or the muscle? That they do not begin in the nerves of the skin is clear from the following facts:—1. A light tap or push over the patellar tendon will not give rise to the knee-jerk. 2. If the skin is lifted up in a fold, so as to be quite separate from the tendon, and is then tapped, no contraction of the muscle follows. But, on the other hand, if the skin is divided and the blow struck on the exposed tendon the leg is immediately jerked forward; this experiment seeming to show that the irritation starts from the tendon—a view that gets additional weight from the circumstance that Sachs has demonstrated the existence of nerves to the patellar tendon. But this view—viz., that the impulses arise in the nerves of the patellar tendon, is disproved by an experiment of Tschirjew. This observer divided all the nerves to the tendon patellæ in an animal, and, notwithstanding, a blow on it caused the muscle to contract. Further, in all cases in which a blow on the patellar tendon causes the muscle to contract, it must be in a condition of passive tension, and in some cases, as Erb has shown, *sudden* tension alone, as by quickly pushing down the patella, so as to make the quadriceps tense, will cause the appearance of the knee-jerk. Dr. Gowers has also shown that in certain cases in which the "tendon reflexes" are in excess a tap on the front of the leg will cause a movement of the foot. Here the stimuli do not act on the tendon but on the muscle.

So then we are compelled to believe that the stimuli arise in the muscle. But if this be granted Westphal's view that the contraction of the muscle is a local one may, after all, be the correct explanation of the phenomenon; and this theory is supported by the fact that Burckhardt, Brissaud, Tschirjew, Gowers, and Waller, who have examined the matter with great care, believe, as the result of their investigations, that the time which elapses between the blow on the tendon and the contraction of the muscle is shorter than it should be if the phenomenon was a purely reflex one. At the recent meeting of the International Medical Congress, in a discussion on his paper, Eulenburg gave his adhesion to the view that it might be a peripheral phenomenon. But if we adopt this explanation, how can we account for the absence of the phenomenon in those diseases which cause destruction of the reflex nervous arc?

Is there, then, any hypothesis which will reconcile these two opposing views, which will account equally well for the contraction

of the muscle being a local one, and will yet explain the circumstance that any lesion which destroys reflex action causes a disappearance of the knee-jerk? The following explanation is given by Dr. Gowers:—"If," he says, "we regard the contractions as local we have still to account for the irritability which permits the local stimulus to cause a contraction. This irritability is developed by passive tension. Hence I have suggested that the tension excites, by a reflex influence, a state of extreme irritability to local stimulation—such as that of a tap on the tendon, or such as the vibration from a tap near the muscle, or from a tap on the bone to which the tendon is attached—which thus excites a visible contraction."

I have endeavoured to give a full and fair account of the various views that are held as to the cause of this very remarkable phenomenon. Whatever view will eventually be found to be correct, the fact remains that this patellar-reflex phenomenon is of great value in disease, examples of which I shall now give in this the third part of my paper.

Case I.—*Tabes Dorsalis; characteristic Ataxic Gait; Argyll-Robertson Pupil; absence of Patellar-reflex in both Legs; previous history of Pains in the Legs, attacks of Indigestion, and Diplopia.*—In Sept., 1881, I was consulted by a gentleman, aged forty-two, who gave the following account of his illness:—He was in perfectly good health until the year 1878, when he suffered from attacks of indigestion, accompanied with flatulence, especially after food. These attacks were not attended with vomiting, but during one of them he was much surprised one day, in looking out of the window, to find that each person passing along the street seemed to him to be double. This double vision was merely a temporary annoyance, but the attacks of indigestion have recurred at intervals up to the present time. In 1879 he had pains in "the lower part of his back," of a dull, heavy character, and in the spring of the following year he had also pains in his legs, specially in the back of the right leg, but also, though to a less degree, in the left. These pains have not been of a shooting character, but more like "rheumatic" pains. In the beginning of the year 1881 he first became unsteady in walking, and this unsteadiness was always worse at night. This was noticeable even to his friends at this time, for he states that one evening in coming out of the Turkish baths into the street his walk was so peculiar that a gentleman who was with him said, "You are like a drunken man, or are falling into paralysis." From this time his heels in walking always touched the ground first. In the mornings, while washing his face (his eyes being then closed), he has a tendency to fall forward. Even before

his movements became unsteady he had difficulty in going up and down stairs, and was obliged to keep a firm hold of the baluster. For some time he has had a curious feeling in his feet, "as if there were two or three folds of the sock under the sole of each foot." He never noticed anything peculiar about his eyelids or eyes, with the exception of the double vision which I have mentioned.

Present Condition.—He is a very intelligent, large, well-developed man. He walks in the most characteristically ataxic manner, lifting his feet high, and bringing his heels down on the ground with a thump. He has great difficulty in starting to walk and in turning, his movements at these times being very unsteady. When he brings his feet together, and closes his eyes, he begins to sway from side to side, and would fall if not supported. In both legs, from the knee downwards, he feels the prick of a pin, and a heated knife when in contact with the skin, merely as tactile sensations. There is no wasting of the muscles of the legs, and when lying on a sofa he moves the legs freely in any direction. That the tabetic incoördination has extended to his upper extremities is shown by the apparent difficulty he has in buttoning his waistcoat. His pupils are very small; they do not respond to light, but act during accommodation (Argyll-Robertson symptom). There is no ptosis or strabismus. He has great difficulty in distinguishing blue from green wool. There is no visceral mischief of any kind to be detected in the chest or abdomen. Patellar-reflex absent in both legs.

In the above case, when seen by me, the diagnosis was so clear that the absence of the patellar-reflex was of assistance principally in corroborating the other symptoms; but the great value of the symptom is in the early stages of tabes dorsalis, before the ataxic gait has become developed, and then it is frequently associated with the lightning pains. Of the very great importance of the absence of the patellar-reflex in tabes dorsalis, Dr. Buzzard, one of the most recent writers on that disease, thus speaks:—"Let me say then at once that, in my judgment, we may take it that Westphal's test, the absence of the knee-phenomenon, provided that this is associated with good voluntary power and ideo-muscular contraction of the vastus internus—a provision which Dr. Erb has most strongly and justly insisted upon—is a nearly certain sign of tabes dorsalis. I am prepared indeed, from something which I lately saw, to meet with the absence of the knee-phenomenon as possibly representing the only symptom of tabes in a certain case."

In fifty cases examined by Erb the patellar-reflex was absent in all but one, and he thinks that it is probably always an early

symptom. In his experience it is never absent in young or middle-aged people in health, and hence he thinks that its absence may be regarded as almost pathognomonic of tabes in its earlier diagnosis.

The lesion in tabes dorsalis is sclerosis of the posterior columns, or, to state the matter more correctly, of that portion of these columns known as the "posterior root-zones" (Charcot), involving the posterior roots on their way to the posterior cornua. This lesion causes an interruption of the sensory impulses in their passage to the spinal centre, and so the patellar-reflex is lost. Even without our knowledge of the morbid anatomy of tabes, we would almost be warranted in concluding that the motor portion of the reflex arc was intact, from the fact that good voluntary movement of the lower limbs is preserved, and absence of any wasting of the muscles; while, on the other hand, that the sensory portion of the loop is affected, is apparent from the lightning pains and the anæsthesia.

Westphal thinks that there is a particular part of the posterior columns which, when diseased, causes the disappearance of the patellar-reflex; and, as bearing directly on this question, I will give a short *resumé* of a case, an account of which he brought before the Medical Society of Berlin.

A man, thirty-two years of age, in whose family there were numerous examples of different kinds of nervous affections, was brought in 1877 to the Charité Hospital, Berlin. He had been blind for six months, being merely able to tell, and that only with his left eye, day from night. He was a pronounced hypochondriac, with all sorts of hallucinations. He had no symptoms of tabes, neither irregular movements, nor anæsthesia, nor lightning pains. In October, 1879, the patellar-reflex disappeared on the right side. He gradually got worse, and died in January, 1880. A few days before his death the "patellar-reflex" was gone on the left side—it continued absent on the right.

At the autopsy, in addition to very advanced degeneration of the optic nerves, optic tracts, and corpora quadrigemina, a yellow zone or strip of degeneration was seen in the centre of the posterior columns of the cord distinctly marked off from the neighbouring parts. The situation of this region of degeneration in the posterior columns was altogether peculiar. It attained its maximum on a level with the lumbar part of the cord. The cornua, columns of Goll, and posterior roots, were intact. Westphal infers from this very unique case that the loss of the patellar-reflex in tabes dor-

salis is due to a lesion involving a definite zone in the centre of the posterior columns of the lumbar part of the cord. This observation of Westphal is particularly interesting as probably representing in some cases of tabes the first pathological change in the spinal cord, and as explaining the early absence of the patellar-reflex. Charcot had previously been led to assume that the sclerosed bands in tabes are slender and narrow so long as the lightning pains are the only symptoms present; as these areas of degeneration enlarge both outwardly and inwardly, the tabetic incoördination is observed. If there is marked anæsthesia, the posterior roots and posterior gray cornua are involved; while, finally, if the sclerosis extends to the posterior part of the lateral columns, the clinical picture is represented by paralysis (with or without contracture), the advanced stage of the malady. As to those case of tabes in which the patellar-reflex is said to be present, Westphal thinks that some of them are not genuine cases of tabes, while in the case of others it is possible that the patellar-reflex may disappear late in the course of the disease, indicating that the central portion of the posterior columns has also been involved at a late period.

Case II.—*Diphtheritic Paralysis; absence of Patellar-reflex; complete Recovery, and subsequent return of the phenomenon.*—On August 24th, 1881, a lad, aged fourteen, was seen by me in the out-patient room of the Children's Hospital. He stated that about six weeks before his legs became weak and unsteady in walking, and at times "seemed to give way under him at the knee-joints." There had been no pains in the legs, but for a time his feet had been "numb and dead," and in walking at first he could not tell whether the ground in contact with his feet was smooth or rough. There had been no symptoms referable to the bladder or rectum. He was now, he said, much better, and had been improving for the last two weeks. The numb feeling had quite left his legs, and he had no difficulty in walking.

Present Condition.—He can move his legs with perfect freedom; there is no wasting or flabbiness of the muscles, and no anæsthesia. The patellar-reflex is absent in both legs. There is no loss of the power of accommodation, or any other eye symptoms. The condition of the palate is normal, and there is no evidence of any form of paralysis to be detected. On questioning him more closely I learned the following facts, which explained the nature of the case:—Three months before I saw him he had a "very bad sore throat," and was so ill and weak that he was obliged to remain in bed for a fortnight. Soon after getting up again his mother noticed that his voice had become altered, and "was as

if he was speaking through his nose." At this time he began to have difficulty in swallowing, and he says that frequently, on taking milk, part of it would return through his nose. After having been up for a week he went back to work, but did not remain long, as, owing to a pain in his side—due, he thinks, to exposure to cold—he was obliged to take to his bed a second time. During all this time the difficulty in swallowing continued. While lying in bed the second time he was very much surprised to find that in reading the newspaper he was obliged to hold it at a much greater distance than usual from his eyes, because when he brought it closer "the letters," as he puts it, "seemed to run into one another and to become indistinct." He mentioned this circumstance to his friends, but they could see nothing wrong with his eyes. After being in bed for a week he got up, and sometime afterwards his legs began to get weak. His arms have never been affected.

I did not see him again until January 26th, 1882, when I found that the patellar-reflex was present in both legs. He said he was quite well, and at work every day as usual.

It is plain that this boy suffered, in the first instance, from a diphtheritic sore throat, which was followed by paralysis of the muscles of the soft palate and pharynx (shown by the nasal tone of voice, the difficulty of swallowing, and regurgitation of milk through the nose); of the eye (in this case the ciliary muscle was involved, as was evident by his inability to read the paper when held close to his eyes, the letters being then indistinct, while he could manage to read it when it was held further off); and of the lower extremities (indicated by the weakness of the legs, the difficulty in walking, the anæsthesia, and the absence of patellar-reflex).

In connexion with this case the following remarks of Buzzard are, I think, very apt, when, in speaking of tabes dorsalis, he says:—"There is one pathological condition, however, which may possibly give rise to some doubt—indeed, I have met with an instance in point. In diphtheritic paralysis there is often a tottering gait, accompanied by numbness in the extremities. If there should be, as sometimes happens, no difficulty in deglutition, and no failure of the power of accommodating the eyes, a strong superficial resemblance to a case of tabes dorsalis is presented. In such a case the patellar-tendon reflex will, in all probability, be absent, and the vastus internus muscle may contract as freely as in health to direct percussion. The acuteness of the symptoms, however, the absence of the characteristic lightning-pains, and the

history of preceding sore throat should be sufficient to distinguish this condition from tabes."

In this case, when first seen by me, the only symptom present was the absence of the patellar-reflex. The previous history, however, showed that it had been a case of diphtheria with paralytic sequelæ — a diagnosis which was confirmed by the ultimate return of the patellar-reflex phenomenon.

Several observers have noticed, within the last two years, the absence of the patellar-reflex in cases of paralysis following diphtheria. Any explanation, however, of the cause of this strange occurrence would involve, *in limine*, a discussion of the causation of diphtheritic paralysis itself, which is still, I am afraid, far from being settled. Some recent pathological researches, however, throw very considerable light on the subject. Thus, Dr. Abercrombie examined very carefully the spinal cord and medulla of seven fatal cases of diphtheritic paralysis. The only pathological changes detected were in the gray matter of the anterior cornua, and they consisted in a swollen condition of the large motor cells. "The margins of these are very ill-defined, and the processes have in most instances entirely disappeared. The contents of the cell have a granular aspect, and the nuclei have disappeared, or, where still visible, are highly granular." These changes occurred in limited areas.

M. Déjérine has described the changes met with in three fatal cases of diphtheritic paralysis. They were the same as those described by Abercrombie, but more advanced. These observations seem to indicate that the paralysis may be due in part to the subacute myelitis. If the cord is affected in the lumbar region the reflex arc would be interrupted, and accordingly the patellar-reflex would be lost. It is very difficult, however, to explain the return of the phenomenon, as one would expect, if the cord was affected by a myelitis, that the patellar-reflex would be permanently absent, as we know it is in poliomyelitis anterior acuta.

Another view as to the cause of the paralysis which follows diphtheria is that which is suggested by Buhl. He found in a case that the spinal nerves were thickened at their roots, and that the sheaths of the nerves were infiltrated with lymphoid nuclei and cells. "His view is that in certain cases these infiltrations lead to thickening of the connective tissue, which in turn contracts, and so compresses the nerves. According to him the nerve symptoms appear when the constricting effect of the

thickening of the connective tissue begins, they remain while it lasts, and disappear finally when the thickening diminishes." This hypothesis of Buhl would account for the disappearance as well as the subsequent return of the patellar-reflex in diphtheritic paralysis.

Case III.—*Poliomyelitis Anterior Acuta; Wasting and Paralysis of certain Muscles of Left Leg; absence of Patellar-reflex.*—A lad, five years of age, was brought to the Children's Hospital in December, 1880. The relatives said that two years before he had been "hot and sick for a few days." On recovering from this illness they noticed that his left leg was "useless." They had tried various remedies, with little effect.

Present Condition.—The left leg is smaller and colder than the right. There is also wasting of the muscles of the leg, and partly of those in front of the thigh. When he walks the leg is dragged, and there is a tendency to talipes equino-varus. The left knee-joint is very movable, and the bones of the left side seem smaller than the corresponding ones on the opposite leg. The patellar-reflex is present in the right side—absent in the left. Sensibility is retained.

In this case the absence of the patellar-reflex is due to the destruction of the multipolar ganglion cells in the gray matter of the anterior cornua (the essential anatomical lesion in poliomyelitis anterior acuta), interrupting the impulses in the motor portion of the reflex arc. The wasting of the muscles and their paralysis show that it is the motor part of the loop which is involved, especially as the absence of any loss of sensation indicates that the sensory part is intact.

The absence of the patellar-reflex in poliomyelitis anterior acuta is of great diagnostic value, as it distinguishes that disease from paralysis depending on cerebral causes, the patellar-reflex in the latter being either exaggerated or not altered at all.

Case IV.—*Right Hemiplegia; Contracture of Right Arm; increased Patellar-reflex of Right Leg, and exaggerated "Supinator-reflex" of Right Arm.*—I have at present under my charge, at the Ulster Institution for the Deaf and Dumb and the Blind, a girl, thirteen years of age, who was paralysed at the time she was admitted into the Institution. I have not been able to ascertain the previous history.

Present Condition.—She is deaf and dumb, and is hemiplegic on the right side. There is no rigidity in the leg, but the arm is kept close to the side, the elbow-joint is bent at a right angle, the wrist-joint is flexed, and the fingers are firmly closed. The arm can be extended only after some force is used. The patellar-reflex is very much exaggerated

in the right leg. On tapping the tendon of the right supinator longus, the hand is immediately jerked toward the shoulder. There is no paralysis of the face or tongue.

In cases like the above the exaggeration of the patellar-reflex may be due to the withdrawal of the normal inhibitory action of the brain, owing to rupture of the pyramidal tract, but against this explanation of the phenomenon is the fact that the exaggeration of the patellar-reflex is not, as a rule, noticed immediately after the lesion in the brain, but seems to require some days to elapse before it can be observed. Seeing that the exaggerated patellar-reflex is often associated in these cases with late rigidity (a phenomenon depending on descending degeneration of the pyramidal tracts in the lateral columns), some think that the increased tension of the muscles under such conditions may give rise to a condition of irritability in the terminations of the nerves, which, in turn, increases the excitability of the spinal centre. But this is clearly not the real explanation of the exaggeration of the patellar-reflex in these cases, as the phenomenon appears long before there has been time for the occurrence of degeneration in the cord. No explanation thoroughly satisfactory has yet been given to account for the exaggerated patellar-reflex in these cases.

BIBLIOGRAPHY.

Westphal.—*Archiv für Psychiatrie und Nervenkrankheiten*, Band V., 1875. "Ueber ein frühes Symptom der Tabes Dorsalis" *Berliner klinische Wochenschrift*, January, 1878). *Berlin. klin. Wochenschr.*, Nos. 1 and 2, 1881. Reference is made to this communication in the *Archives Générales de Médecine* for April, 1881.

Erb.—"Sehnenreflexe bei Gesunden und bei R-M-Kranken" (*Archiv für Psychiatrie u. Nervenkrankheiten*, Band V., 1875). *Ziemssen's Cyclopœdia*, Vol. XIII., American translation. "Diseases of the Spinal Cord and Medulla," by Erb.

Charcot.—"Diseases of the Nervous System," New Sydenham Society, 1881.

Brissand and Franck.—*Le Progrès Médical*, March, 1880.

Grainger Stewart.—"Tendon Reflex," a Clinical Lecture, *Medical Times and Gazette*, Feb. 2nd, 1878.

Hughlings Jackson.—"Eye Symptoms in Locomotor Ataxy," *Lancet*, Dec. 18, 1880.

Gowers.—"The Diagnosis of Diseases of the Spinal Cord,"

Second Edition, London, Churchill, 1881. "A Study of the so-called Tendon Reflex Phenomena," *Medico-Chirurgical Transactions*, Vol. LXII.

Ross.—"A Treatise on Diseases of the Nervous System," 2 vols., London, Churchill, 1881.

Buzzard.—"On Tendon Reflex as an Aid to Diagnosis in Diseases of the Spinal Cord," *Lancet*, Nov. 27th and Dec. 4th, 1880. Clinical Lecture "On Cases of Acute Atrophic Paralysis in Infants and Adults," *Lancet*, Dec. 11th and 25th, 1880. "Absence of Patellar Tendon Reflex in a Case of Paralysis following Diphtheria," *Lancet*, April 17th, 1880. "On certain little-recognised Symptoms of Tabes Dorsalis," *Transactions of International Med. Cong.*, London, 1881, Vol. II.

Waller.—*Brain*, July, 1880.

Abercrombie.—"On Diphtheritic Paralysis in Children," *Transactions of International Med. Cong.*, London, 1881, Vol. IV.

Supplement to *Ziemssen's Cyclopædia*, edited by Peabody, 1881. Article, "Locomotor Ataxia."

Eulenburg.—"On Graphic Tracings of Tendon Reflexes," *Transactions of Intern. Med. Cong.*, London, 1881, Vol. II.

Tschirjew.—*Archiv. für Psych.*, Band VIII., Heft 3.

Berger.—*Centralbl. für Nervenheilkunde*, Nov. 4, 1879.

Oertel.—"Diphtheria," *Ziemssen's Cycl.*, Vol. I.

Déjérine.—"Recherches sur les Lésions du Système Nerveux dans la Paralysie Diphthéritique," *Arch. de Phys*, X., 1878.

Art. IX.—*Excision of the Shoulder-joint.* By P. J. Hayes, F.R.C.S.E.; Surgeon to the Mater Misericordiæ Hospital; Lecturer upon Surgery in the Catholic University School of Medicine; Consulting Surgeon to St. Michael's Hospital, Kingstown, &c.

Cases demanding excision of the shoulder-joint do not frequently present themselves to the practising surgeon; therefore, as I have been called upon to perform the above-named operation twice during the past year, I publish brief details of my cases, in the hope that they may be found to possess some features of interest.

Case I.—M. S., female, aged thirty-three, married, admitted to hospital May 26, 1881, suffering from extensive suppuration about the left shoulder. The patient states that sixteen years ago she was treated by

the late Mr. Tyrrell for an abscess which appeared in the left axilla. The abscess was opened, and a sinus formed, which for nearly two years continued to discharge a serous fluid. Subsequently the sinus healed, and the patient expected to escape all further trouble. However, two years ago she was attacked with pain—of a dull, aching character—affecting the shoulder-joint, causing her great distress and loss of rest at night. Suffering and disability of the shoulder became aggravated until about six months ago, when an abscess formed in front of the left axilla. This was opened by the dispensary medical officer, who had attended the woman two months previously in her confinement, and pus continued to escape both from the wound and from a sinus which formed at a higher point. Ultimately the woman observed failure of her general health, and then obtained admission to the Mater Misericordiæ Hospital. Thorough examination of the shoulder—the patient being at the time under the influence of ether—enabled me to detect a large amount of carious bone exposed in the suppurating cavity of the joint, consequently I decided to resect the articulation.

On June 3rd, 1881, I performed the operation according to the method recommended by Professor Ollier, of Lyons. It may not be out of place for me to introduce here a brief description of the manner in which this procedure should be conducted. The patient's arm having been slightly abducted and rotated inwards, the point of the surgeon's knife is to be entered boldly a little below the tip of the coracoid process of the scapula. The knife is then to be carried downwards and outwards for a distance of about four inches, cutting parallel to the long axis of the humerus, and dividing all tissues down to the bone. The surgeon next completely opens the capsular ligament, divides the periosteum parallel to the outer edge of the long head of the biceps muscle, and proceeds to separate these structures from the bone in an outward direction, his assistant rotating the arm inwards, so as to enable the operator to peel off the tendons inserted into the greater tuberosity. The next step to be taken is to lift the long head of the biceps from its groove, and then, whilst the arm is being rotated outwards, to denude the inner aspect of the bone of both periosteum and tendinous attachments. When the lesser tuberosity will have been well cleared, the head of the humerus can be tilted forwards through the wound, and the posterior surface of the neck stripped of capsule and periosteum so far down as may be required before being sawn through. If the glenoid cavity should be in a diseased condition, all carious bone is to be cleared away by successive applications of gouge, pliers, and osteotrite, until a healthy bleeding surface becomes exposed.

Upon opening the shoulder of my patient, I discovered the head of the humerus to be almost detached, the upper part of the shaft to be carious, and the superior portion of the glenoid cavity, as also the corresponding

region of the neck of the scapula, to be in a diseased condition. I sawed through the humerus a little below the level of the superior epiphysary line, and by means of a gouge, followed by use of an osteotrite, I removed carious bone from the scapula as far as the anterior border of its spine.

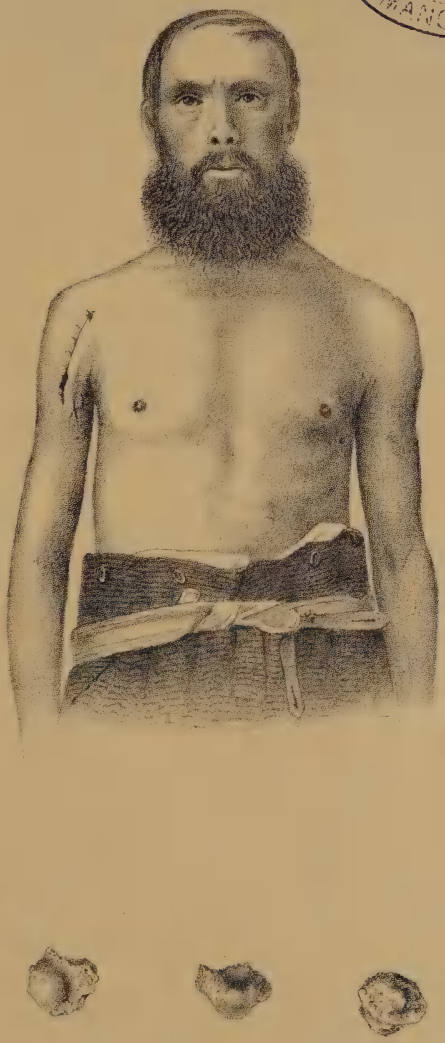
The woman's health improved from the date of the operation, and she was able to leave hospital July 16th. I have seen her lately, looking well, and with a useful, freely movable arm. In this case the cicatrix, which marks the line of incision, is large, because extensive suppuration existed over the anterior region of the shoulder, and consequently the operation wound did not heal by the "first intention."

Case II.—P. F., male, aged forty-three, admitted to hospital July 22nd, 1881, suffering from ankylosis of the right shoulder. This patient, who is a tenant-farmer, on April 2nd assisted other "Land-leaguers" in obstructing some process-serving business. A conflict took place between police and peasants, during which my patient was struck by a grain of buckshot. The shot entered about three-quarters of an inch below the coracoid process of the right scapula, causing loss of power, together with severe pain in the shoulder. The man subsequently suffered from symptoms of traumatic fever, accompanied by discharge from the wound, and he was treated in a County Infirmary until May 13th, when he was dismissed, with the wound perfectly healed, but with a shoulder so stiff that it was impossible for him to labour in the way he found needful.

On his admission to the Mater Misericordiæ Hospital, I found the patient had an ankylosed shoulder, but I considered it proper, in the first instance, to try whether, by manipulation, I could not break through recent union, and then, by the exercise of passive motion, effect permanent mobility of the arm.

A few days after the arrival of the patient, I caused him to be rendered anæsthetic by inhalation of ether, and assisted by Dr. Thunder, together with my then resident pupil, Mr. Charles M'Cormack, I proceeded to fix the scapula, and by short movements to rupture the abnormal connexions between that bone and the humerus. The application of very moderate force caused the arm to move, but it was manifest that fracture of bone tissue had taken place, as true crepitus attended each movement of the humerus. This condition, of course, rendered prognosis comparatively unfavourable; still I determined to attempt the establishment of a false-joint, should circumstances favour the trial. I was obliged to abandon this idea, because rather sharp inflammation appeared about the shoulder, the old shot track re-opened, and for ten days discharged pus freely; also an abscess formed close to the anterior fold of the axilla, and was opened by a free incision. Under

ST. MARY'S HOSPITAL
RADFORD
LIBRARY
MANCHESTER



Mr. Hayes' Case of Resection of Shoulder and Extraction of Buckshot

appropriate treatment, the man's sound constitution enabled him to recover quickly; but, as it was clear that good would not result from further manipulation, I caused the arm to be kept at rest until such time as the state of parts should permit of ex-section of the injured articulation.

On August 25th, the tissues about the shoulder being in a most satisfactory condition, I cut upon the humerus after Ollier's method. At once I found that the head of the humerus was fused to, and formed a common bony mass with, the glenoid angle of the scapula. Slight force caused re-fracture of the anatomical neck of the humerus, and from the line of fracture I picked out the buckshot figured in the accompanying illustration. Corresponding to the situation of the shot, the bone was carious, but with moderate use of the gouge I was able to expose perfectly healthy tissue above and below the line of fracture. The wound was then closed, drained, and dressed with full antiseptic precautions. Union by adhesion took place, save at the upper and lower angles of the wound, where granulation tissue completed the reparative process, and then passive movements were practised daily, so as to insure fibrous union between the bone surfaces. The man was discharged from hospital Sept. 30th, highly pleased at again possessing a movable and useful arm; and within the past month I have received from Dr. M'Cormack the gratifying intelligence that my former patient now enjoys great strength and freedom of motion in the previously almost useless limb.

ART. X.—*Phthiriasis Palpebrarum.* By J. MAGEE FINNY, M.D., Univ. Dubl.; F.K.Q.C.P.; Physician to the City of Dublin Hospital.

PROFESSOR J. Hirschberg recently demonstrated the presence of pediculi pubis in the eyelids of a child, three years old, before his class at a clinical lecture, and gave the following interesting account of this rare affection (*Berliner klinische Wochenschrift*, January 2nd, 1882):—

The child's eyelids were observed by her mother to have something the matter with them on her return after some months absence from home.

On looking closely, it was noticed that the edges of both upper eyelids were affected, but that they lacked the usual evidences of blepharitis or blepharadenitis, such as ulceration, yellow scales, and crusts involving two or three ciliæ. The change consisted in the presence of little, clear, round bodies, placed in great regularity at the junction of the hairs with the lid. These were the

eggs of the insects, the pediculi themselves being almost hidden as, head foremost, they lay embedded in the sebaceous follicles. In but two or three places did the end of their bodies show above the free border of the lid as little, greyish-yellow scales. Professor Hirschberg then proceeded to rub in a strong mercurial ointment, and, after waiting a quarter of an hour, demonstrated the pediculi, as, not liking the ointment or else requiring air, they had withdrawn from their nests to the surface of the eyelids, from whence they were readily removed by a ciliary forceps. In a few days the patient was discharged cured. As there was an absence of hair elsewhere on the body no other pediculi were discoverable.

The occurrence of pediculi pubis on the eyelids is one of great rarity. Prof. Hirschberg had met with but two other instances in his practice out of 40,000 cases, and he saw but one other while he acted as assistant to Prof. von Gräfe.

Dr. Bulkeley, of New York, has met with two instances of phthiriasis palpebrarum (*Archives of Dermatology*, Vol. VII., p. 309). Dr. Stelwagon, Philadelphia, records (*Ibid.*, p. 301) a single instance of the same disease, and alludes to two others being seen by Dr. Morton, in one of which the eyebrows were infested. The most noticeable feature about each of these three cases was the presence of the excrement (reddish specks) on or beneath the lower lids, resembling specks of iron rust.

It is worth noting that all these cases occurred in children and young people—a fact at variance with the statement of Tilbury Fox ("Skin Diseases," p. 411)—"The pediculus pubis is not found amongst children, but adults."

These pediculi, as their name implies, are usually confined to the hairs of the pubes; but it is to be borne in mind that they may be found in every other part of the body where hair grows, except the hairy scalp—the chest, eyebrows, beard, axillæ. I have never met with an instance of their presence on the eyelids, but I discovered them on the arms and legs of a patient who consulted me for general pruritus. He was an unusually hairy man, aged twenty-three, and on closely examining his legs below the knee I detected several specks of excrement and one or two crab-lice. I then examined the rest of his body, and found the insects, in fact, wherever the hair existed—the pubes being attacked to a much less extent than the legs.

Prof. Hirschberg, alluding to the rarity of the above affection, quotes, while not altogether agreeing with, the statement of Dr.

Steffan (in the *klin. Monatsblatt für Augenheilk.*, 1867) who had met with one example of the disease, "that he could find nothing on the subject in the literature on ophthalmology."

The discovery of the crab-louse in the eyelids is not of recent times—cases of it have been recorded by Scarpa and Chelius; and, nearly 2,000 years ago, Celsus described the correct nature of the complaint in the following words (*De Medicinâ*, Lib. VI., cap. 6, 15):—"De pediculis palpebrarum. Genus quoque vitii est, qui inter pilos palpebrarum pediculi nascuntur, id φθειριασιν græci nominant."

ART. XI.—*On Two Large Auricular Growths following the Operation of Puncture.* By WM. ALLAN, L.R.C.S.I.; Assistant Colonial Surgeon; Medical Officer to the Victoria Hospital, Bathurst, Gambia, West Africa.

THE following interesting case came under my care in the month of January, 1882:—B. Bahoo, aged sixteen years, presented himself at the extern department for admission into the Victoria Hospital on the 11th day of January, in order that he might receive surgical treatment for two large auricular growths.

Through an interpreter I was enabled to obtain the following history:—As is the custom amongst African tribes, he had his ears pierced for earrings when eight years of age. Shortly after

the operation the tumours, represented here by a drawing taken from a photograph, appeared, and had, when examined by me, attained to the following proportions :—The right tumour, attached to the lobulus of the ear, and having cutaneous attachments to the parotid and mastoid regions, measured from above downwards 9 inches, and in circumference 14 inches; lobulated, hard and firm to the feel. The left tumour, smaller than the right, and having a somewhat similar attachment, measured from above downwards 9 inches, and 10 inches in circumference. A small portion of the posterior inferior part of this tumour exhibited leucoderma, whilst the anterior inferior end of the right tumour showed signs of commencing degeneration.

The boy was quite ashamed of his appearance, and begged earnestly to have the growths removed. After placing him for a few days on preparatory treatment, I ligatured the base of the right tumour with some little difficulty, the first ligature, though strong, giving way. The nutritive supply of the tumour having been interfered with, I dissected it off from its attachments, removing a portion of the ear and surrounding tissues to prevent, if possible, a recurrence of the growth; weight on removal, two pounds twelve ounces. I repeated the same operation with the left tumour, but passed a double ligature through the centre of the pedicle, on account of its size, tying it anteriorly and posteriorly; weight on removal, one pound twelve ounces. There was a fair amount of arterial hæmorrhage, on account of the arteries supplying the tumours being unable to contract; pressure on the common carotid and torsion were of service.

The after-treatment consisted in rest and a pill containing opium and quinine. The parts were washed daily with carbolic acid lotion and afterwards dressed with zinc ointment. No glandular enlargement existed at any time.

Mr. Bryant, in the second edition of his "Practice of Surgery," in treating of affections of the external ear, says :—"The fibroplastic or cheloid has been already alluded to as occurring in the lobulus of the ear after the operation of puncture. I have seen many such, the largest having been the size of a walnut."

The case is an interesting one from the large size of the tumours, and from the length of time over which their growth extended—namely, eight years. Both tumours have been reserved for microscopic examination. The growths are probably of a fibro-plastic nature.

ST MARY'S HOSPITAL RADFORD LIBRARY MANCHESTER

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

RECENT WORKS ON CLIMATOLOGY.

1. *The Ocean as a Health Resort: a Practical Handbook of the Sea, for the Use of Tourists and Health-Seekers.* By WILLIAM S. WILSON, L.R.C.P., Lond., &c. Second Edition. London: J. & A. Churchill. 1881. Pp. 351.
2. *Health Resorts for Tropical Invalids in India, at Home, and Abroad.* By W. J. MOORE, Dep.-Surg.-Gen. H. M. Forces, Bombay. London: J. & A. Churchill. 1881. Pp. 195.
3. *Monaco: the Beauty-Spot of the Riviera.* By THOMAS H. PICKERING, M.K.Q.C.P.I., &c. London: The Fleet Printing Works. Dublin: William M'Gee. 1882. Pp. 158.
4. *The Climate of the Undercliff, Isle of Wight.* By J. L. WHITEHEAD, M. D. London: J. & A. Churchill. 1881. 8vo. Pp. 46.

1. THE fact that a second edition of Mr. Wilson's "Handbook of the Sea" has been called for within a year since the first edition appeared is a practical warrant of the commendation bestowed on it in this Journal last November twelvemonths. We then spoke fully of the value and usefulness of the work, and we have since had personal testimony to the same effect from a gentleman to whom we recommended the book, and who has taken the voyage to Australia for the benefit of his health. Both as to its scientific value and practical usefulness this second edition is an advance on the first. The specific action of the ocean climate upon the health is more fully considered, and statistics are furnished showing the influence of such a climate in the prevention and cure of pulmonary complaints. A chapter is also added giving an account of New Zealand and its climate. This colony, although one of the best in the world for those in good health, is not generally so well suited as regards its climate as that of Australia for invalids who are suffering from chest delicacy. Physicians who may prescribe a sea voyage for any of their patients, or who may

be consulted on the advisability of such a voyage being undertaken, will obtain an amount of detailed information in this Handbook which will be of the greatest mutual benefit.

2. The main idea of Mr. Moore's work is to give "such cursory accounts of the sanitaria at home and abroad as will, if not always enabling the reader to determine on a suitable position, yet indicate that locality concerning which more information is desirable." These localities are considered under four heads: — I. Health Resorts in India; II. Tropical Marine Sanitaria; III. Health Resorts Abroad; and IV. Health Resorts at Home. Mr. Moore is well known in India as the author of several standard works on tropical diseases and on the preservation of health among Anglo-Indians. His writings are concise and eminently sensible; and from his long service in India and his wide experience of the country, he is justly entitled to speak with authority. The hill-stations in India are divided, sanitarily, by Mr. Moore into extra-tropical climates—viz., the Himalayas and intra-tropical mountain climates. The principal requirement in India is, he says, to escape heat; therefore the value of Indian hill-ranges is limited to those conditions in which simply a cooler atmosphere may be expected to be beneficial. When there is specific disease, as of the liver, or bowels, or spleen, contracted in the tropics, a more radical change is necessary than a tropical mountain climate. Mr. Moore incidentally asserts, contrary to the opinion of some writers, that the Indian climate, solely from the exposure to prolonged heat which it entails, is inimical to the European constitution. Having described in alphabetical order, in Chapter I., the Indian Hill-stations, their geological formation, climate, amusements, mode of access, suitability or otherwise for various conditions, &c., he dismisses in a few words, in Chapter II., tropical marine sanitaria as being unsuitable as health resorts. The importance of a tropical invalid and his physician taking carefully into consideration the particular climate suited to each individual case, and not being misled into the too common belief that a change "home" to the cold climate of Great Britain is all that is necessary, is well insisted on. Mr. Moore recognises six types of tropical invalids, and points out the different health resorts, in his opinion, suitable to each of these classes, the object to be kept in view in the treatment of each being different. This is a portion of the work which physicians in this kingdom who may have tropical invalids under their care will

find it advantageous to consult; for although the descriptions which are given of each of the numerous health resorts at home and abroad are necessarily condensed, they afford just the kind of information a physician having charge of such patients would require. As regards Ireland, it is stated that "probably Queenstown and Kingstown are the only places where a tropical invalid should stay," and a fair description is given of the former resort. How Glengariff, not to mention other suitable health resorts in this country, could have been omitted from such an otherwise full list of sanitaria is a matter of surprise and regret.

3. Monaco is a locality more generally looked upon by the stay-at-home public as a kind of moral plague-spot in the Riviera rather than its beauty-spot; yet no one can have visited it in the season without having been struck by the charm of its situation and the wealth of its climatic advantages. It is only, however, within a very few years that the latter have been properly recognised, and this to a great extent has coincided with the growth of this favoured spot, especially in the district of La Condamine, owing to the increasing number of health and pleasure seekers that now pass an "ideal" winter there. Dr. Pickering, who writes, as we know, from a lengthened personal experience and study of winter health resorts, gives the palm to Monaco over all other stations of the Riviera. "The air," he says, "is drier, more fresh, and exhilarating than at any other health resort on the Riviera, at the same time it is as warm and equable as the eastern bay of Mentone." The principality is also completely surrounded on the land side by mountains, and is therefore free from those frequent gusts of wind which are so objectionable in the neighbouring maritime towns. In all cases of consumption in which the disease is attended with symptoms of nervous excitability or irritation, Monaco and the Riviera climate generally is contra-indicated, and the sedative balsamic climate of Arcachon is to be preferred. But the great majority of cases of this disease, according to Dr. Pickering, do well at Monte Carlo, and we quite agree with him that the various amusements and surroundings of the place, and which Dr. Pickering so pleasantly and well describes—always apart from those of the *tapis vert* itself—have much to do in promoting the well-being of the patient by diverting his thought from himself, and thus encouraging him to throw off that depression which invalids always in each other's society so often suffer from. We would strongly

recommend the perusal of Dr. Pickering's little work to all interested in or visiting the Riviera—as, quite apart from its medical value, it contains a large amount of most interesting and well-written historical and local information.

4. The object of Dr. Whitehead's paper, which was written originally to be read in the Public Health Section of the British Medical Association, at the Ryde meeting in August last, is to publish a number of important statistics, compiled from meteorological observations taken by the late Dr. Martin, of Ventnor, and his brother, Mr. Martin, M.R.C.S. We learn from Dr. Whitehead's remarks, introductory to a series of thirty-four elaborate tables, that the meteorological observations extend over an unbroken space of forty years — namely, from 1840 to 1879 inclusive. They were commenced by the late Dr. Martin soon after his arrival at Ventnor, and his attention was the more especially directed to such observations, as he was at that time engaged, on behalf of his friend the late Sir James Clark, in calculating and arranging for him the tables which were subsequently published in his well-known work upon Climate.

The Undercliff of the Isle of Wight extends from Bonchurch to Blackgang, a distance of between six and seven miles, with an average breadth of a third of a mile. It has been formed by the subsidence of the land, at some remote period, from the Uppercliff, which rises between 400 and 500 feet above the level of the sea, and backs it, for the most part, as with a wall. In its descent the land has fallen into natural terraces, which face the sea and front nearly due south. The consequence of such an arrangement, with its insular position, has doubtless a marked influence with regard to its climate, obtaining for it a mildness during the winter, as also coolness during the summer, which it otherwise would not possess, the slanting and terraced condition of the land enabling the sun's rays to fall more directly on the surface than they otherwise could do during the winter; while the shade of the upper cliffs affords protection from the dwelling rays of a summer's afternoon, and with the aid of a sea breeze shutting out the hot north summer winds renders the atmosphere comparatively cool and pleasant during the warmest periods of the year, the result being a mild climate during the winter and equally cool climate during the summer. In proof of the foregoing observations it is only necessary to point to the great equability of its temperature, as evidenced by the meteorolo-

gical observations carried over the very long period before alluded to. Sudden transitions from great heat to cold and extensive range of temperature may be said to be unknown. The soil of the Undercliff is dry, being for the most part composed of chalk with the upper green sandstone intermingled at various points with the gault, but the whole mass is much disrupted and broken up. The result is, that the surface soon dries after rain. The Undercliff is full of springs of the purest water, and the water supply afforded to the town of Ventnor and its immediate neighbourhood by the water company has every advantage of not only a pure but also a superabundant source. The prevailing winds are westerly, and, taking the period of forty years, the northerly and easterly winds as compared with southerly and westerly are 5,934 to 8,584.

As regards the sanitary condition of the town of Ventnor, Dr. Whitehead informs us that in 1880 the main drainage was thoroughly examined, defects were permanently remedied, and, where necessary, a new sewer was laid down; a house-to-house inspection by the medical officer and inspector of nuisances was carried out, and a record kept of each house, compulsory action being taken to compel as far as possible proper communication with the main sewers. Certificates as to the satisfactory condition of each house were offered by the board on the payment of a small fee. The water supply as obtained from the company was also entered into, proper connexions were made, and a constant instead of an intermittent supply was insisted on. Existing wells were likewise also examined, and the water obtained from them was forwarded for analysis to the public analyst, and where suspicious the wells were closed. The result of the action so taken was soon evident from the absence of those evils usually attributed to the influence of sewer gas, and the town, as far as sanitary arrangements are concerned, may be safely said to be placed on a most satisfactory footing.

A recent visit to the Undercliff led us to take a special interest in Dr. Whitehead's interesting little work, and we earnestly recommend it to all physicians who wish to give their patients the benefit of a residence in a sea climate probably unsurpassed in the treatment of pulmonary diseases.

Practical Exercises in Physiology. By J. BURDON-SANDERSON, M.D., LL.D., F.R.S. London: H. K. Lewis. 1882. Pp. 75.

THIS small volume is intended to serve as a guide to the practical courses which are given in the physiological department of University

College. It is divided into four parts, of which the first consists of exercises on the properties of muscle and nerve, the second contains a number of miscellaneous demonstrations, while the third and fourth are devoted mainly to physiological chemistry.

The first part begins with the apparatus necessary for make-and-break shocks and muscle-nerve preparations. Then follow the phenomena of contraction curves, and experiments relating to electrotonus. The nervous mechanism of the frog's heart, the reflex functions of the cord, sensation and perception, and the electromotive phenomena of muscle are the concluding sub-sections of this part, and the whole of the second. All the experiments can be performed in the pithed frog, with the exception of those showing arterial pressure, the influence of the vagus in respiration, and of the sympathetic on the vascular system. These, of course, require anæsthetised animals. The chemistry is mainly that of digestion arranged in a series of exercises of progressive complexity. *Inter alia*, we may refer to, among other useful paragraphs, Grützner's method of comparing the digestive powers of solutions. It would be a very useful test to apply to the peptic and pancreatic preparations of rival pharmaceutists. Grützner's method depends upon the fact that when fibrin stained with carmine is subjected to the action of a digestive ferment, as the fibrin is dissolved the carmine is liberated, and colours the fluid, the amount so set free being estimated by an artificial scale consisting of ten solutions of carmine of different strengths, equal quantities of the stained fibrin being mixed with equal volumes of the digestive liquid to be compared.

No book on laboratory work by Dr. Burdon-Sanderson could fail to obtain popularity, but we are inclined to think that if the directions and explanations had been more full than they are in the present volume, it would have been more widely useful. Of course, since it is intended for the use of University College students, who have the advantage of the author's personal supervision, a few concise hints on each line of investigation would probably suffice. But as a guide book to a student working unaided, the details given are, in many cases, too concentrated or too meagre. Very few, for instance, could construct, from the description given of it, the "simple and useful myograph," for making which directions are given on page 11. Nor is the chemistry of blood as fully illustrated as it might have been. To some extent the book falls between two stools—to readers who are

already acquainted with the subject the directions are superfluous; to those who are not they are too abbreviated for ready comprehension. If this drawback were remedied, as it could easily be in the next edition, we should have in Dr. Burdon-Sanderson's work an excellent students' handbook to the elementary methods of physiological research.

Manual of Dental Surgery and Pathology. By ALFRED COLEMAN, L.R.C.P., F.R.C.S.; Examiner and Licentiate in Dental Surgery, &c. London: Smith, Elder, & Co. 1881. Pp. 335. 252 illustrations.

IT has fallen to the lot of few of us to have enjoyed for a period of twenty-five years the opportunities of recording and collecting facts of importance in the practice and study of dental surgery—the branch of medical study to which Mr. Coleman has devoted himself. How far these opportunities have been used for the advantage and instruction of others less favourably circumstanced than the author, and for the progress of this important branch of surgery, which has steadily grown and prospered—uninfluenced and unaided by our medical schools and professors—into the dignity of a learned profession, regulated and privileged by an Act of Parliament, the volume before us speaks eloquently.

A few years ago the leading works on the subject of Dentistry were comprised within very modest limits, and Mr. Coleman has attempted to make the present volume a text-book on dental surgery. The work is written in an easy, conversational style, and contains many little facts and niceties of practice not easily collected without prolonged experience in daily practice, so that it will be of use to the dental student and beginner, if it fails to satisfy the wants of the busy practitioner.

The volume treats of "First dentition;" "Irregularities of the permanent teeth," a subject in which we expected to find some useful principles enunciated on which to base the treatment of a very common deformity, which is often misunderstood by ordinary practitioners; "Injuries to the teeth;" "Dental caries," a chapter in which great stress is laid upon the "Chemico-vital" theory of disease; "the Treatment of dental caries;" "Difficulties met with in filling teeth;" "Periodontitis," a chapter full of information and good sense; "Necrosis;" "Exostosis," &c.—most of the subjects being very simply and clearly explained.

Exception may be taken to some of the methods recommended for extraction, as far as the position of the operator is concerned, leaving him exposed to the sudden violence of an excitable or restless patient, without any corresponding advantage of control over the parts to be operated upon; and we regret to see the use of the elevator untrammelled by any recommendatory caution for the operator to use his *wrist* rather than his arm or shoulder in applying the necessary force to dislodge a root from its socket, and, by steadying the elbow against the side of the operator's chest, to run less risk of slipping, and wounding the tongue or cheeks.

The important subject of neuralgia is barely touched upon, and very little information is afforded for the purpose of diagnosis or treatment, and we confess to a feeling of disappointment that some stress has not been laid upon such characteristic symptoms as are usually relied upon in forming a diagnosis.

We also fail to notice any recommendations with reference to the best treatment of the softer qualities of teeth, particularly in children, such as have been recently brought forward by Dr. Höllander—facts which must have been more or less familiar to a practitioner of Mr. Coleman's experience.

The author lays much stress on the value of the illustrations, some 250 in number, most of which have been borrowed from a dental manufacturer's catalogue, and are not, in our opinion, as useful as they might be. Amongst the special ones such examples as Nos. 8, 10, 18, 19, and 38 have been rudely and carelessly engraved by an artist who evidently had not the least idea of what he was expected to illustrate, and we venture to say few readers familiar with the appearance of the oral mucous membrane would consider it adequately represented in No. 10, in which the sockets of the upper incisor teeth appear to be at least two inches long.

Dangers to Health. By T. Pridgin Teale, M.A.; Surgeon to the General Infirmary at Leeds. Third Edition. London: J. & A. Churchill. 1881. 8vo. Pp. 170.

Mr. Teale's "Pictorial Guide to Domestic Sanitary Defects" has evidently supplied a much-felt want, and aided materially in arousing public opinion to a sense of the dangers which lurk in the basement stories, drains, and waste-pipes of many of our dwelling-houses.

The first edition appeared in 1878, and was very favourably noticed in the number of this Journal for April, 1879 (page 312). We have now merely to endorse the opinion we then expressed as to the merits of the book. The plates have increased from 55 to 70 in number owing to the voluntary supply of so great a quantity of new material by Mr. Teale's friends and professional brethren, that he has come to regard himself as "a sort of centre to which information about drainage defects has gravitated."

The "Sanitary Maxims," prefixed to the pictorial part of the book, deserve to be printed in letters of gold. We are glad to see that copies of the "Maxims" may be obtained of the "National Health Society," Berners-street, London, at the very moderate cost of two shillings per 100.

Consumption: a re-investigation of its Causes. Showing it to arise chiefly from an excessive action of atmospheric oxygen. By C. W. De Lacy Evans. London: Baillière, Tindall, & Cox, 20, King William-street, Strand. 1881. Pp. 78.

The author disclaims the merit of originating the idea contained herein, stating that he is indebted for it to one "Parallax" (founder of the modern Zetetic philosophy), to whom the work is inscribed. Of "Parallax" and his school of philosophy we are lamentably, and it may be culpably, ignorant, but it is satisfactory to know, page 27, that he, "Parallax," says:—"We have ascertained beyond all doubt that consumption is the direct result of a decomposition or combustion of the tissues by the *undue action of atmospheric oxygen.*" We think the book will be preserved only by those who collect the literature of wild theories on consumption.

Guy's Hospital Reports. Third Series. Vol. XXV. 1881. 8vo. Pp. 531.

This medical classic maintains its high reputation as to contents, plates, and woodcuts. Art. V., on "Reflex Action in Diagnosis," by P. Harrocks, M.D., will be studied by those interested in many of the most obscure diseases of the spinal cord. The diseases are specified in which the tendo-muscular phenomena are absent or exaggerated. "The Fatal Termination of Diabetes, with especial reference to the Death by Coma," is discussed by Frederick Taylor, M.D. It appears that the various attempts which have

been made to explain its occurrence by reference to alterations in the chemical or physical properties of the blood have not yet had any uniform results. Forty-three cases are detailed which terminated in this manner, and from them it appears that coma is developed at almost all periods of the disease, and under the most different forms of treatment. There is an elaborate essay by F. A. Mahomed, M.D., on "Chronic Bright's Disease without albuminuria." This is a thesis for the degree of Bachelor of Medicine of the University of Cambridge, read June 16th, 1881. One of the most interesting articles in the volume is that by Francis Galton, F.R.S., and Dr. F. A. Mahomed—"An Inquiry into the Physiognomy of Phthisis by the method of 'Composite Portraiture.'" A consideration of large numbers of photographs shows that the average of phthisical faces have more delicate features, an apparently lighter lower jaw, and an altogether narrower face than the average of other diseases.

ARSENIC IN THE TREATMENT OF LYMPHOMA.

A WOMAN of sixty-five had difficulty in swallowing and breathing, and suffered from general feebleness, deafness, &c. Her condition was cachectic. Examination revealed a tumour in the posterior pharynx filling up the nasal and pharyngeal cavities; the submaxillary and axillary glands were also swollen and hard. These growths were made to disappear, and the woman was regarded as cured in five months. This remarkable result was accomplished by the combined internal and parenchymatous administration of Fowler's solution. The arsenic was given in large doses, mixed with acetated tincture of iron, from 8 up to 25 drops three times a day. In this way 28 grammes were consumed in the course of the treatment. The injections consisted of equal parts of Fowler's solution and distilled water, of which there was injected from one to three-tenths of the capacity of a Pravaz syringe (about three to 9 minims). There was but little reaction of the general organism, but a marked acceleration of the pulse. Locally the tumours increased considerably in size with the first injections, but after the second week rapidly declined (*Berl. klin. Wochen.*, 1880, No. 52). Czerny has employed the method of Billroth, above described, in the cure of glandular lymphomata. In six months he obtained a complete cure of a case in which the patient had taken 746 drops, and had received 76 injections of 10 drops each.—*Wien med. Wochen.*, 1881, No. 2, and *Medical Progress*, Jan. 7.

ST MARY'S HOSPITAL
RADFORD
LIBRARY
MANCHESTER

PART III.

HALF-YEARLY REPORTS.

REPORT ON SURGERY.

By William Thomson, M.A., F.R.C.S.I.; Surgeon to the Richmond Hospital; Member of the Surgical Court of Examiners, Royal College of Surgeons, Ireland.

ON SPONGE-GRAFTING.

In the *Edinburgh Medical Journal* for November, 1881, Mr. D. J. Hamilton publishes a paper full of interest, under the above heading. In a previous paper (*Journal of Anatomy and Physiology*, Vol. XIII., 1879) he had made the statement and endeavoured to show experimentally that the vessels of a granulating surface are not newly formed, but are simply the superficial capillaries of the part which had become displaced. They have been thrown upwards as granulation loops by the propelling action of the heart, because the restraining influence of the skin has been removed. In studying the subject of organisation still further, he was struck by the similarity of the process of vascularisation as seen on a granulating surface, and that which occurs when a blood-clot or a fibrinous exudation is replaced by a vascular cicatricial tissue. Being convinced that the blood-clot and fibrinous lymph, before organisation takes place, was just as so much dead matter in a tissue, it occurred to him that if we could employ, instead of these two materials, some dead porous animal tissue, it also would become vascularised and replaced by cicatricial tissues. An accidental circumstance directed his attention to sponge, which he used in a variety of experiments. He grounded his hope on the fact that it is a porous tissue, and in this respect would imitate the interstices of the fibrinous network in a blood-clot, or in fibrinous clot. Secondly, it is animal, and would become absorbed in course of time. Thirdly, it is pliable, and can be adjusted to any surface.

The first experiment was on a woman suffering from an ulcer

on the leg five inches in diameter. The wound was filled with one large and several small pieces of sponge, prepared by dissolving the siliceous and calcareous salts by means of dilute nitrohydrochloric acid, subsequently washing in liquor potassæ, and then steeping for some months in a 1 in 20 solution of carbolic acid. There is, however, no necessity for steeping it for so long a time. The sponge in the central part of the wound rose a little higher than the edges, so that at its greatest thickness it must be measured at least from half to three-quarters of an inch, and five inches wide. It filled accurately, and was inserted under the undermined edges. Over this was placed protective—some lint soaked in a 1 in 20 solution of carbolic acid in glycerine, and then a pad of boracic lint. Next day it was re-dressed; on the following there was distinct putrefactive odour, and the wound and sponge were irrigated with a 1 in 40 carbolised solution. On the fifth day the wound seemed to have shrunk a little, and there was little putrefactive odour. The thin parts of the sponge felt very firm, and the interstices were evidently filling with organised tissue. If the surface was pricked, it bled freely. Healing seemed to be going on from the edges and from below upwards. From this onwards the sponges rapidly filled with organising tissue, and there was only a small portion of it to be seen on the surface. As soon as it became vascular the epithelioma spread over it. On the 29th November (the experiment began on the 3rd August) the circumference of the limb which had healed was 21 inches, while the measurement of the other limb was 19. The cause of the increase was the tumour-like mass of new tissue which had now supplanted the sponge. Several other ulcers were similarly treated. In another case sponges were placed in the gap caused by the removal of a large recurrent cancer of the mamma. In this case the wound and the sponge remained aseptic.

In subsequent microscopical investigations Mr. Hamilton noticed a significant phenomenon, supporting the theory that the blood-vessels were pushed into the sponge as loops—namely, that when the convexity of a loop came in contact with the sponge framework instead of one of its pores, a curvature formed on the vessel at the opposing point, and on each side of the obstacle there was pushed in a secondary loop, similar to that from which both had arisen.

The experiments are certainly very suggestive, and open up a large field for investigation.

EXCISION OF THE TONGUE.

Mr. Walter Whitehead, of Manchester, now publishes notes of thirty cases in which the tongue has been entirely removed by his method. In one case the patient died on the twenty-first day, and in another in fourteen hours after the operation, of shock.

"The operation is conducted after the following simple manner:—

"1. The mouth is opened to the full extent with Mason's, or any other suitable gag, the duty of attending to this important part of the operation being entrusted to one of the two assistants required.

"2. The tongue is drawn out of the mouth by a double ligature passed through its substance an inch from the tip. This ligature is given in charge of the second assistant, with instructions to maintain throughout the operation a steady traction outwards and upwards.

"3. The operator commences by dividing all the attachments of the tongue to the jaw and to the pillars of the fauces, after the manner suggested by Sir James Paget, with an ordinary pair of straight scissors.

"4. The muscles attached to the base of the tongue are then cut across by a series of successive short snips of the scissors until the entire tongue is separated on the plane of the inferior border of the lower jaw, and as far back as the safety of the epiglottis will permit.

"5. The lingual or any other arteries requiring torsion are twisted as divided. It is generally found that a moment's pressure with a small piece of sponge, held in sponge forceps, suffices temporarily, if not permanently, to arrest any bleeding; it is, however, regarded as desirable to twist, either immediately or after the tongue is removed, every bleeding vessel.

"6. A single loop of silk is passed by a long needle through the remains of the glosso-epiglottidean fold of mucous membrane, as a means of drawing forwards the floor of the mouth should secondary hæmorrhage take place. This ligature may with safety be removed the day after the operation, and, as it is invariably a source of annoyance to the patient, it is always desirable to adopt this rule.

"The after-treatment consists in feeding the patient for the first three days absolutely and solely by nutritive enemata, satisfying thirst by occasionally washing out the mouth with a weak iced solution of permanganate of potash, forbidding any attempt at speaking, and requiring that all the wishes of the patient shall be expressed in writing, or by signs. The difficulties and dangers of the operation are few, and more imaginary than real. Hæmorrhage, the *bête noire* of most surgeons who contemplate removing the tongue, is in reality easily controllable, and frequently trifling. I have twice removed the entire tongue without having to secure a single vessel, and more than once have only had to twist one lingual artery."

Discussing various methods of treatment he claims for his own simplicity and greater success than is to be attained by any other. He does not agree in the statement that cutting operations are more likely to be followed by hæmorrhage or by septic infection. The statement is directly opposed to the conclusions drawn from over 250 cases. His own experience would induce him to say that the danger from hæmorrhage when either the knife or scissors is used is simply *nil*, as the arteries, should they require it, are either twisted or tied. He does not admit that, because in some of the cases where the tongue has been removed by the écraseur no bleeding takes place, the absence of bleeding is the consequence of any action the écraseur may have in crushing the arteries; on the contrary, he is inclined to the belief that the hæmorrhage stops from pressure, just as it will frequently stop, when the knife is used, by the momentary pressure of the finger. During the last four years Billroth—who appears to have had by far the largest experience of any surgeon in the removal of the tongue—has entirely abandoned the use of the écraseur on account of the enormous mortality, which he estimates at 61·5 per cent.

THE TREATMENT OF VARICOCELE.

Dr. M. H. Henry, of New York, has revived the method suggested by Sir Astley Cooper of treating varicocele by free excision of the redundant scrotum. The many other operations recommended from time to time deal with the enlarged veins themselves, but even the best of these plans is not always reliable. Dr. Henry has operated fourteen times with very good results, and others have adopted the proceeding with satisfaction. The instruments used are thus described:—

"The instrument which I have called scrotal forceps, or clamps, consists of two parts. The main part of the instrument has two double-curved blades, made of steel, about ten inches long, sufficiently heavy to give strength and admit of pressure without injury when in contact with the tissues. The handles are large enough to admit of a good grasp without cramping. That part of the instrument below the joint is curved as nearly as possible according to the natural lines of the raphæ, from the upper anterior part of the scrotum down to and under the scrotum, so that it embraces, when placed in front of the scrotum, the entire and exact portion which it is desired to remove. The coapting surfaces are evenly notched to prevent the tissues from slipping, affording a more secure hold on the soft parts, with less pressure and less injury

than smooth surfaces. The blades are only thick enough to give strength, without leaving too much tissue in front. The handles are curved, so that, while they maintain a direct median line, they do not interfere or press on the genital parts. The double spring, besides giving additional security and compactness, renders them, to a great extent, self-acting, easy of manipulation, and that, at times of very great consequence, ability on the part of the operator to perform the operation without the aid of additional assistance. The screws in the handle and at the end of the blades afford a complete and perfect hold of the parts to be removed. They are not adjusted until the operator is perfectly satisfied that he has embraced the exact portion to be removed in front of the blades. The extra blade is made of steel, nickel-plated, and is maintained in the right anterior surface of the clamp by two small pins that fit in grooves cut in the clamp. It is easily inserted with a little pressure, and removed as easily by pressing downward and forward; it is then dislodged by slightly raising the extreme end. The extra blade, when in position, leaves a fenestra to afford the surgeon the facility of inserting all his ligatures, should he prefer it, before dividing the parts. The thickness or amount of the tissue left in front of the main blade and between that and the extra blade, which is the guide for the part to be removed, is ample to assist union, and if the division is a clean one, and the stitches are close and evenly inserted, the pressure and tension are so slight, or rather, divided over the entire cut surfaces, that there is little probability of ulceration through the stitches before union has taken place. When the part has been removed the extra blade is displaced, leaving a free border exposed in front of the main blade about a quarter of an inch in thickness. In a few minutes the whole wound can be stitched without any inconvenience. The clamp is, of course, not removed until this is accomplished. Besides the clamp, the only instruments necessary are the scissors or scalpel, needles, with either silk or fine silver wire for sutures, a few acupressure needles, a few *serres-fines*, silver pins, and some adhesive plaster. For the removal of the redundant portion I prefer scissors to the knife. I am inclined to think the hæmorrhage is apt to be less and the cut edges heal more readily by first intention. I cannot give any positive explanation for this, but such is my impression. When the double layers of the scrotum are tightly compressed between the blades of the clamp, it forms a very dense, tough substance, and requires a pair of very strong, sharp scissors to cut through. It is as dense as cartilage. A strong pair of scissors will, with some extra effort, serve the purpose; but, to insure an easy and clean removal of the part, I use a cutting instrument, which I have named cartilage-scissors. . . . The forceps should be applied while in a standing position; this will afford the surgeon the best opportunity to decide the exact portion of scrotum to be removed. If this precaution

be taken, there is no danger whatever of his removing too much tissue. I am satisfied there is much more danger of his not cutting off enough. The patient being placed in a recumbent position, his thighs well separated with folded towels, the forceps are applied by placing the blades in front and under the anterior portion of the scrotum, and held in a direct median line. The end of the forceps being close to the perinæum, the scrotum is then engaged between the blades of the forceps. Care must, of course, be exercised not to include anything more than the scrotum. As soon as they are adjusted and the proper amount of tissue to be removed engaged between the blades, the screws should be tightened and the part removed."

THE PREVENTION OF STRICTURE, AND OF PROSTATIC OBSTRUCTION.

Mr. Reginald Harrison, of Liverpool, has published in book form two papers upon the above subjects. They are of sufficient interest to invite perusal, and the views which he holds will be regarded as worthy of being tested in practice. In the treatment of gleet, and indeed of all urethral discharges in the deeper part of the urethra, he very properly condemns the use of that most inefficient instrument, the glass syringe. If the injection ever reaches those parts, its contact with the diseased spot is so brief as to be, as he points out, really useless. Setting aside a discussion of the questions whether a gleet indicates a stricture already formed, or only precedes it, it may be admitted that the latter is most frequently the case, and that if we can cure this affection, we shall prevent the formation of a narrowing of the canal. Mr. Harrison describes his treatment as follows:—

"For some time past I have been employing in the treatment of gleet a very thorough irrigation of the urethra throughout its whole length by means of an apparatus which I have specially constructed for the purpose. So far the results obtained have been highly satisfactory in speedily curing the gleet and consequently preventing the formation of stricture.

"In carrying out my views I have taken a hint from what is now done with so much benefit in affections of the nasal passages—a thorough irrigation or washing out of these by a suitable contrivance being substituted for the imperfect medication by syringes, brushes, snuffs, and such-like expedients, which were formerly prescribed with so little advantage. Many of the diseases of the nasal spaces which heretofore were considered most intractable are, by the improvements in mechanical contrivances referred to, rendered perfectly amenable to treatment.

"To effect complete irrigation of the urethra, I make use of a small Higginson's syringe and a sufficiently resisting vulcanised india-rubber catheter. I direct the patient twice or thrice a day to douche most thoroughly his urethra by means of these appliances, entirely discarding for the purpose all his notions about the old glass syringe arrangement as being utterly unfitted to cure a gleet. If the patient does not from the first recognise the necessity of submitting his urethra to a complete medicinal washing, his efforts here also, like his previous ones, will probably be ineffectual.

"I direct the patient to denude himself of his nether garments, and, seating himself in a chair with his pelvis inclined forwards to the edge, to introduce the soft catheter and gently pay it into the urethra, having previously anointed it with some vaseline. If the patient finds that he can introduce and retain more easily a stiffer catheter, he may substitute one of the French instruments in the same way, of the required length and size, taking care that the eye is within half an inch or thereabouts of the end. Having done this, he attaches the catheter to the small Higginson's syringe, which is connected with a tumblerful of the fluid to be used, tepid. I generally make use of the sulpho-carbolate of zinc, of the strength of about half a teaspoonful to a pint of water. The patient, steadying the catheter in his urethra with his left hand (not squeezing the meatus around it), slowly compresses the ball of the syringe with his right hand, the vessel containing the fluid to be injected being placed by his right side, or attached, as may be done by a bottle arrangement, to the feeding-pipe of the syringe. In this way the patient is directed to continue using the apparatus until the urethra has been completely washed out; the fluid, after it has circulated between the walls of the urethra and the catheter, escaping through the meatus, and being received into some convenient receptacle."

It may be noted that the catheter used is six inches in length, and of a No. 6 English gauge, so as to allow plenty of room between it and the walls of the urethra, in which the injected fluid can circulate.

The prevention of obstruction by an enlarged prostate is of not less importance, and Mr. Harrison claims that this is possible. In a case under his care, which he had afterwards an opportunity of examining *post mortem*, he found that the daily use of a bougie had left a free channel in the enlarged prostate, so that the patient never suffered from the increase of the gland. Upon this subject he says:—

"On the recognition of symptoms indicating that enlargement of the prostate has commenced, I at once urge the regular and persistent

employment of the prostatic bougie. For the most effectual carrying out of this treatment, I instruct the patient as early as practicable in the introduction of the bougie, and when I have determined the size of the instrument, I require him to use it daily, or at the least thrice a week, on going to bed.

"In the employment of instruments for this purpose it is of importance that a kind should be used which is efficient, and at the same time incapable of doing harm to the parts when placed in the hands of a non-professional person of average intelligence. After many trials of different shapes and descriptions of bougies, I have come to the conclusion that the instrument which best answers the purpose is the bougie olivaire, of which I have selected some different sizes.

"The olive-shaped dilators exercise as much pressure as can be desired on the obstructing portion of the prostate, whilst, by reason of the small size of the stem, no tension is thrown on the most sensitive portion of the urethra—namely, the orifice.

"I have these prostatic dilators made from two to four inches longer in the stem than ordinary urethral bougies, in order that the olive portion may be fairly passed into the bladder. In this way pressure is exerted on the prostate as the expanded part passes into the bladder, and again as it is withdrawn. It is very important that the instrument should be used in this way, as the dilatation exercised by the bulb, on the withdrawal of the bougie, corresponds with that of the urine as it is expelled from the bladder.

"The patient should place himself in the recumbent position, with the buttocks slightly raised, and then, having lubricated the bougie freely with vaseline, and made it pliable by drawing it a few times through the hand, he should slowly introduce it until the expanded portion is fairly within the bladder; he then gently withdraws it. In this way, as I have already explained, the prostate is twice acted upon by the expanded portion of the dilator.

"At first the instrument may be passed once in forty-eight hours, subsequently twice, and in cases where the prostate has already become large, I have caused it to be used night and morning with most satisfactory results.

"If the treatment is commenced sufficiently early, though the prostate may be hypertrophied, obstruction to micturition is effectually prevented. When the prostate has already become enlarged, and there is also difficulty in micturating, this treatment will be found equally efficacious. In either case it is necessary to continue this treatment long after all indications of obstruction have ceased."

NERVE-STRETCHING IN LOCOMOTOR ATAXY.

An interesting paper by Dr. Cavafy will be found in the *Brit. Med. Journal* of Dec. 10 and 17, 1881, on the subject of nerve-

stretching in locomotor ataxy. The operation has been many times performed in these cases, but the results are hardly encouraging. Dr. Cavafy collects eighteen cases. In eight the ataxy was diminished; in four there was no improvement; while in the remainder the result is not stated, and it may fairly be assumed that the result was not favourable. Dr. Cavafy is inclined to think that the operation is applicable especially to early cases, and where pain is a prominent symptom, but he should not hesitate to employ it in later ones also, as it has not been followed by any injurious results beyond temporary paralysis, and this very rarely. In one case death followed from a venous thrombus. Dr. Cavafy very properly urges that this stretching should be done upon some recognised plan. Gillette has devised a flattened blunt hook for the purpose. It is inserted under the nerve, traction being made at right angles to its course, while the limb is held down by an assistant. A dynamometer is so connected with the instrument that the force employed is exactly indicated on a dial.

Dr. Charlton Bastian (*Brit. Med. Jour.*, July 2, 1881) thinks the influence of the operation over the disease so decided as to deserve further trial. He is also of opinion that it may prove of considerable service in conjunction with electrical treatment in certain cases of chronic spinal paralysis in children and adults. The increase in the temperature of the limb operated upon may decidedly help to improve the nutrition of its wasted muscles, and thus perhaps render them more amenable to electrical treatment.

CARIES OF THE SPINE IN CHILDHOOD.

Mr. Howard Marsh (*Brit. Med. Jour.*, Nov. 12, 1881) raises the question of the efficacy of Sayre's method of treating spinal caries in young children, and expresses his belief that in a large proportion of cases it is a failure. The jacket is supposed to relieve the superincumbent weight of the spine at the seat of disease. For this it is essential that there must be an efficient basis on which the jacket may rest, and the jacket must have a secure hold on the part of the column which it is required to sustain. In young adult females the basis of support is fairly ample. But in adult males the pelvis is less expanded, and its circumference is often less than that of the thorax; in children under seven, on the other hand, while the circumference of the pelvis measures, say, 20 inches, that of the thorax is often from

21 to 24 inches. Thus, while the thorax and pelvis in young adult females form a cone with the base directed downwards, in males, and quite as markedly in children, these parts form a cone the wide part of which is above. How, then, can the pelvis afford the jacket an efficient base on which to rest while it transmits the weight of all the parts appended to the upper part of the spinal column. But, further, it should be remembered that the tendency of the column is to fall forward, and that therefore it is required that the purchase should be specially firm in front. It is held by some that the purchase anteriorly is not on the abdominal wall, but on the iliac spines and crests. In children, however, these parts are so little salient that the jacket cannot "clip" them; and, moreover, Sayre recommends that the spines should be padded while the jacket is being applied—the pads being removed just before the plaster has completely set. The jacket does not fit closely to the chest, for it is always possible to pass the finger between the jacket and the surface of the thorax.

Mr. Marsh comes to the conclusion that the best method at present known for the treatment of spinal caries is that by complete recumbency. This plan, if carried out for six to eighteen months, or even longer, will generally effect a cure. It is advisable, however, to combine the use of some firm apparatus, and for this purpose Cocking's poroplastic jackets are decidedly preferable.

TAPPING THE BLADDER FROM THE PERINÆUM THROUGH THE PROSTATE.

Mr. Reginald Harrison (*Brit. Med. Jour.*, Dec. 24, 1881) records a case in which he adopted this proceeding in a man aged eighty-four. No catheter could be passed to relieve the retention, the tongue was brown, and there was much exhaustion. Taking a trocar with a silver cannula he introduced it in the median line of the perinæum, three-quarters of an inch in front of the anus, and pushed it steadily through the prostate into the bladder, at the same time retaining the left index finger in the rectum as a guide. The cannula was secured in position, and a piece of india-rubber tube was attached, which allowed the urine to dribble away. In forty-eight hours the patient was sitting up, the tube being compressed by a pair of bull-dog forceps, which were removed when the patient desired to pass water. At the date of the publication of the paper (about seven weeks subsequent to the operation) the man remained well.

A NEW OPERATION FOR EXSECTION OF THE INFERIOR MAXILLARY NERVE IN THE SPHENO-MAXILLARY FOSSA.

At the Hospital of Oral Surgery an operation for this exsection was practised by Prof. Garretson at his clinic, November 19, in a manner which, in the ease and certainty of the performance, places the matter in an entirely new position and converts complexity into simplicity.

After making the required trapway by dissecting the masseter muscle from its attachment to the ramus of the lower jaw, a cylindrical drill, half an inch in length and the same in diameter, was inserted into the mandril of a powerful surgical engine; and by it in revolution to the extent of five thousand times in a minute, the nerve was quickly laid bare to its place of entrance into the bone at the posterior dental foramen. Next, the opening being enlarged until the pterygoid muscle was fairly exposed to view, the nerve was cut at the site of its inferior exposure, and, being lifted from its bed and held on the stretch, the handle of a scalpel was made to isolate it up to the point of emergence at the base of the skull. It was there excised, a pair of delicate iris scissors being used.

The ease with which this most complex operation is performed after the manner described requires to be seen to be appreciated. The impression produced on the large number of students and medical gentlemen present was marked. It will surely divest the operation of the fear and hesitation always felt by the surgeon undertaking it.—*Phil. Med. Times*, Dec. 17, 1881.

ST. MARY'S HOSPITAL RADFORD LIBRARY MANCHESTER

FIDDLE-STRING AS A BOUGIE.

Dr. F. E. Daniel, of Jackson, Miss., failing in a case of very tight stricture to get in the smallest ordinary bougie, used in the emergency a small *fiddle-string*. This passed in readily. Being withdrawn in a few minutes, it was found to have swollen to nearly twice its previous size. A larger one was then passed and allowed to remain fifteen minutes; this being then withdrawn, the urethra was sufficiently dilated to get in a No. 4, then a No. 6 bougie, and finally a flexible Nélaton's catheter, threaded on a fiddle-string. A second case was equally satisfactory. Dr. Daniel claims for the fiddle-string (catgut) cheapness, simplicity, availability, harmlessness, strength, and rapid expansion.—*Maryland Medical Journal*, and *Medical News*, Jan. 21.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE COLLEGE OF PHYSICIANS.

SESSION 1881-82.

GEORGE JOHNSTON, M.D., President.
ALEXANDER NIXON MONTGOMERY, M.K.Q.C.P., Honorary Secretary.

Wednesday, February 1, 1882.

J. W. MOORE, M.D., Vice-President, in the Chair.

Coloboma of the Chorioid and of the Optic Nerve Sheath.

DR. ARTHUR H. BENSON read a paper with this title. [It will be found at p. 177.]

DR. PURSER suggested that different conditions had been grouped together under the term coloboma, and that in those cases where the retinal vessels ran over the abnormal part, and where, consequently, the retina itself must have been present, there was no evidence of an arrest of development. He also made some remarks on the development of the eye, and thought that the invariable position of coloboma of the iris at the lower part of the eye, corresponding to the position of the fœtal fissure of the retina, pointed to the development of the iris previous to the complete closure of this fissure.

MR. STORY said he had brought down a picture of a coloboma which had been observed in the eye of a rabbit by Professor Deutschmann. It was a rabbit kept for experiments on the artificial production of tuberculosis; and there was a coloboma so-called not only of the chorioid, but also of the iris. The investigation, *post mortem*, showed that the chorioid and the sclerotic were continuous, and that there was no absence of the chorioid at all, just as Professor Purser had rightly said there ought not to be if this anomaly was due to a simple arrest of development. In this case the retina was broken off suddenly

at each side of the coloboma, and curled up back on itself, and the retinal epithelium also ceased at the same spot, so that there was an absence of both the outer and inner layers of the secondary optic vesicle at the place of the coloboma. Between the retina and the chorioid there was some inflammatory matter effused, which had pushed the retina away from the chorioid. The theory proposed by Professor Deutschmann might meet a great number of cases; it was that the fissure of the optic vesicle did close in these colobomatous globes, but that some inflammatory process subsequently occurred which broke it open again. According to this view, the occurrence of retina in the floor of the coloboma was due to its having been caught in the cicatricial contraction, and pulled across the coloboma, there not having been any retina originally there at all.

Dr. Henry Kennedy asked whether this form of disease was confined to young deaf and dumb persons, or did it occur in adult life?

Dr. Arthur H. Benson, in reply, said he was unable to say whether it was more frequent in the deaf and dumb than in any other class of persons. Out of somewhat under 500 individuals that they examined in the institutions about Dublin, they found two cases of double coloboma, and that was an enormously larger proportion than existed in the entire population of the country, but the number of cases examined as yet was too small to draw fixed conclusions from. Coloboma was undoubtedly a congenital defect—at least, was not formed after birth. With regard to Professor Purser's observations, no doubt inflammation was one of the factors in the production of coloboma, and was an important one in many cases, as he had stated. As to the existence of a fissure in the normal fœtal iris, the iris coloboma being always in one particular place—viz., downwards and slightly inwards, did not, he considered, prove anything, as that would naturally be the place of selection for iris coloboma, whether due to arrested development or to the result of an inflammatory process which disturbed the nutrition of the corresponding portions of the retina and chorioid.

Peculiarity in the Urine of Acute Pneumonia.

Dr. Walter Smith made a communication relative to a peculiarity observed in the urine of a patient suffering from acute pneumonia.

A young gentleman, aged twenty-two years, who previously had not been in very robust health, caught cold on the evening of January 20th, 1882. That night he was seized with rigors, headache, and vomiting, and the temperature ran up to 105°. He complained of intense pain over the precordial region. Marked irritability of stomach, with frequent vomiting, continued for several days. On the 24th January—*i.e.*, the fifth day of his illness—the physical signs were detected of early consolidation in the base of the left lung. The pneumonia extended, involved

the other lung, and the constitutional symptoms became very grave. The young man never rallied, and sank early in the morning of January 28th.

The temperature curve exhibited considerable remissions, and, tested upon numerous occasions, the temperature in the *right* axilla was higher than in the left, sometimes by more than 1° F.

Some of the urine passed on the 24th and 25th was examined. That of the 24th was very turbid with lithates; that of the 25th was nearly clear. Each specimen was bright coloured and acid; chlorides markedly deficient.

(1) *Serum-albumin.*—Tested by the usual methods a very moderate amount could be precipitated; no distinct flocculi.

(2) *Serum-globulin.*—Saturation of the urine with sulphate of magnesium threw down an abundant precipitate of globulin.

(3) The urine, freed from albumin, *yielded an opaque white precipitate with tannic acid*, and also with phospho-tungstic acid, and it was rendered turbid by alcohol. The tannic precipitate dissolved by heat, and was reprecipitated on cooling. These reactions suggested the presence of peptone; but since the urine, when freed from mucus (by acetate of lead) and albumin (by precipitation along with basic acetate of iron), yielded no colour with Millon's test, and failed to give the xantho-proteic reaction, the presence of any albuminoid seems to be negatived. Moreover, all attempts to get the characteristic biuret-reaction for peptone ended in failure.

The patient had been treated with sulphate of quinia, but direct testing of the urine for that alkaloid gave a negative result.

Dr. Henry Kennedy observed that Dr. Smith had alluded to the length of time that elapsed before the physical signs of pneumonia were developed. That had been often observed before, and it occurred not only in pneumonia but in most of the principal diseases of the organs in the chest. It often happened that pericarditis manifested itself after the physician had been looking for three or four days in vain for physical signs. He would ask Dr. Smith was there any perspiration—a sign that the late Dr. Stokes laid great stress on? With respect to another point alluded to by Dr. Smith—namely, that the thermometer gave a higher indication for the right than the left side of the patient's chest—that might be explained by the supposition that in the first instance the disease was in the interior of the lung, where it was not possible to detect it. According to his (Dr. Kennedy's) observations the thermometer invariably stood from 1° to 2° higher on the diseased than on the opposite side.

Dr. Purser thought that the substance described by Professor Smith could not be peptone or any proteid, as it failed to give the fundamental

reactions of such bodies—namely, the xantho-proteic, Millon's, and the biuret reactions.

Dr. Fitzpatrick said pneumonia had been very prevalent in Dublin within the last six months; and a characteristic of the disease had been its stealthy, silent onset, without symptoms or physical signs. He saw two cases in which there was no cough, or hurried circulation, or increased temperature; the only symptom being *malaise*, or influenza. On examining one of these cases he found that the inferior thirds of both lungs were in a state of pneumonia. The other case had been attended by a respectable practitioner, and appeared to be influenza, and the only demonstration that caused alarm to the patient's family was that she got occasional fits of dyspnœa, which lasted for about half an hour and then passed off. When he examined her he found that a third of both lungs was in a state of pneumonia. These two cases recovered. Both cases were treated with blistering and small doses of mercury, but the recoveries did not take place for a long period.

The Chairman remarked that the outcome of the case from a clinical stand-point was that it afforded another proof that pneumonia is an essential continued fever manifesting itself in connexion with the lungs only after the lapse of a certain period of invasion. In fact, the lesion of the lungs was analogous to the condition of the intestines in typhoid fever, or to the condition of the skin in the exanthemata or eruptive fevers.

Dr. Smith, in reply, said that rough respiration was detected before the physical signs of consolidation were observed, and the case was treated as one of pneumonia several days before the signs of consolidation. It was quite possible that Dr. Kennedy's suggestion as to the cause of the rise in the temperature in the right lung might be correct. If albuminous urine was kept over, and if the albumin entered on a certain state of change, peptone was formed, so that it might be found in the urine without having been really excreted from the patient's body as peptone. They were still in want of a definite test for peptone. The red reaction, called the biuret test, and produced with caustic soda and sulphate of copper, might answer very well when applied to peptone in a tolerably isolated condition, but did not answer so well when applied to the detection of peptone in a complex liquid. Moreover, other albuminoids gave colours like it, only with different tints. He was not so sure that they were in possession of accurate methods for the discrimination of albumin and globulin from peptone, and under all circumstances he thought the assertion of the existence of peptone in urine should be received with caution. He thought the case in its clinical aspects entirely bore out the view that pneumonia was essentially a constitutional malady, with a local development in the lungs.

The Society then adjourned.

PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

FORTY-FOURTH ANNUAL SESSION.

JOHN A. BYRNE, M.B., President.
WILLIAM ROE, M.D., Honorary Secretary.

Saturday, January 7, 1882.

G. H. KIDD, M.D., in the Chair.

Hegar's Dilators.

DR. MACAN exhibited a set of Hegar's dilators which he had brought back with him from Germany last autumn, and made the following remarks as to their use:—Of late years, on account of the danger of septic infection attending the use of the ordinary methods of dilating the uterus, whether by sponge, laminaria, or tupelo tents, numerous attempts have been made to dilate the uterus quickly by means of instruments specially invented for this purpose. One class of these instruments have two or more branches, which are introduced closed into the cervix and then forcibly separated. To this class belong the dilators of Priestly, Ellinger, and Busch, the last of which also I now exhibit to the Society. The chief objections to such instruments is that they dilate the cervix unequally, and their complicated nature renders their thorough disinfection almost impossible. The other class of dilators is represented by the one I have now the honour to lay before you. The idea of dilating the cervix by graduated bougies is not original with Hegar, but was first proposed by Peaslee, and both Hanks and Lawson Tait have introduced graduated uterine dilators made of vulcanite. Hegar's dilators differ, however, very essentially from these, both as to their shape and also as to the number of dilators that are considered requisite. Hanks' dilators consist of a set of ten hollow vulcanite ovoids, which can be screwed into a common handle. Mr. Tait's dilators are only four in number, are conical in shape, and also fit into a common handle. Hegar's consist of twenty-five pieces, each piece being about 5 inches long and cylindrical in shape. At one end the cylinder is flattened out for a distance of $1\frac{1}{2}$ inches, so as to form a sort of handle. The first piece has a diameter of 2 millimetres, and the diameter of each successive piece increases by half this amount, or 1 mm.

In order to introduce them the woman is placed on her side in Sims' position and his speculum is introduced. The cervix is then fixed with a

vulsellum, and then one of the dilators is introduced till it passes the internal os. If it goes in quite readily, it is at once removed and the next larger size introduced. If, on the contrary, there was much difficulty experienced, the dilator is left for from 5 to 10 minutes *in situ*, at the end of which time the next number can be easily introduced. As a rule, we may commence with No. 5–7 in women who have borne children, and with No. 3–4 in those who have not. Each dilator is stamped with the same number as there are millimetres in its diameter. It is a curious fact that the resistance to dilatation sometimes becomes much less after a certain amount of dilatation has been effected.

If our object be merely to apply intra-uterine injections with Braun's syringe, or to use a small curette, we need not go further than No. 6 or 7. If we want to apply nitric acid to the cavity, it is better to go on to No. 10 in order to be able to introduce a small speculum to protect the cervix. If we wish to introduce the finger, it will be necessary to go on to No. 15–17, and if a fibrous tumour is to be removed we must go as high as No. 26, or even higher.

Under no conditions are the advantages of these dilators better seen than in cases of imperfect abortion. Here we can readily introduce them up to No. 17, and then remove anything that had been left behind. They may also be used to induce abortion or premature labour, and have proved most useful in cases of placenta prævia, for which, however, higher numbers are requisite.

As a rule, it is possible in an hour to produce sufficient dilatation of the unimpregnated uterus to admit the introduction of the finger as far as the fundus. The only contra-indications to their use is any inflammatory condition in or around the uterus.

Before being used the dilators are steeped for several hours in a five per cent. solution of carbolic acid, and are dipped in five per cent. carbolic oil to facilitate their introduction.

I have used these dilators myself several times, and am satisfied that they are superior to all other methods that have been proposed for the quick dilatation of the cervix. Dr. Atthill has also kindly given them a trial on my recommendation, and will, I am sure, give the Society the result of his experience of their use.

The whole process is greatly quickened by having the difference between the diameters of successive dilators reduced to half a millimetre instead of 1 mm., and by putting the patient under chloroform. It has occurred to me that the dilatation might be more easily and quickly effected if each dilator were slightly cylindrical, the diameter at the point being 1 mm. less than at the handle. Then the point of each dilator would be of the same diameter as the opposite end of the dilator that had preceded it. I have therefore ordered a set of dilators thus modified, and hope to be able to exhibit them at some future meeting of the Society.

Curved Scissors.

Dr. Macan also exhibited a pair of curved scissors for the operation for vesico-vaginal fistula, which enabled the operator to cut in a direction at right angles to their shanks.

Dr. Atthill.—I have satisfied myself that Hegar's bougies are superior to any other form of uterine dilators. I have used them four times, but have not yet tested them thoroughly. As a general rule, I am opposed to rapid dilatation of the uterus. I believe slow dilatation by means of sea-tangle to be the safest method we can employ. The pain is not great, provided the case be a proper one for dilatation. If you dilate in an unsuitable case, as where the cervix is conical, it is otherwise, but in such cases dilatation should not be attempted at all; and I have never seen septicæmia ensue after their use, when dilatation was carefully conducted, and care taken to wash out the uterus with some disinfecting fluid on the removal of the sea-tangle. If you dilate with sponge-tent, the risk of septicæmia is greatly increased, because you cannot use sponge-tent without lacerating the mucous membrane of the cervical canal. The mucous membrane sinks into the cells of the sponge as it swells, and must be torn during its removal. I hold that the dilators now before us are not suitable when the cervix is rigid, nor yet is conical, and the os uteri small. In such any attempt at rapid dilatation is exceedingly dangerous, and I never would venture upon it, even with Hegar's bougies. But I believe rapid dilatation by means of these instruments is suitable in many cases in which you have a soft, relaxed cervix. Take the case where a small portion of the membranes of the ovum or of the placenta is retained for some weeks after abortion. Here you have a soft cervix, capable of being dilated rapidly without any risk. Such a case came under my care recently. I commenced with the introduction of No. 5 bougie, and as the cervix was soft, in less than twenty minutes No. 14 was reached, and then I was enabled to pass my finger into the uterus, and detach and remove a portion of the placenta not larger than a bean. I gave chloroform in that case. Next I attempted to use these in the case of a woman who had not been pregnant for many years. This woman was suffering from profuse hæmorrhage After I had got in No. 5 I found the resistance of the cervix so great that I ceased altogether. In that case also I gave chloroform. I am now of opinion that that woman has malignant disease of the fundus, though the cervix is healthy. Subsequently I effected dilatation satisfactorily by means of sea-tangle, and removed portions of a vascular growth, but the pain and hæmorrhage have returned, and the woman's condition is very bad at present. I have a lady under my care in whom I dilated the uterus three times with sea-tangle. On each I removed a vascular

growth, but all our efforts have failed to cure her. I am obliged every week to inject astringent solutions to keep the hæmorrhage in check. I believe there is a malignant growth filling up the uterus, which renders the insertion of even the tube of a small syringe difficult. Since I obtained Hegar's dilators they have facilitated my treatment considerably. I introduced three or four in succession, on each occasion without giving the patient any pain. Then I am able to introduce the tube of the syringe, and inject some iodine without trouble. I have no hesitation in saying that Hegar's are by far the best dilators I have seen. I have tried Lawson Tait's several times, and have found them most unsatisfactory. They are too short and conical.

Dr. Macan, in reply.—I do not pretend to say that the question of immediate or slow dilatation is absolutely settled, but I think the more we use immediate dilatation the better we shall like it. So far as intra-uterine medication goes, the method will, I believe, entirely supersede sponge or laminaria tents. As to the case mentioned by Dr. Atthill of malignant tumour, I do not think it is a very strong argument against Hegar's dilators to say that they failed in a case which is, of all others, the most difficult to dilate.

On Nitrous Oxide as an Anæsthetic in Labour. By A. V. Macan, M.B., M.Ch., and M.A.O., Univ. Dubl.

In no branch of practice probably are the advantages of chloroform greater than in midwifery, and in none are its dangers so slight. There are, nevertheless, sufficient objections to its use to forbid its general application as a means of assuaging the pains of ordinary labour. The chief objection to it in such cases is that it is believed to weaken the pains and lengthen the intervals, and so prolong labour and increase the danger of post partum hæmorrhage. An ideal anæsthetic for labour should not only be safe, but should have no tendency to lessen the force of labour; in other words, should be without any effect on the involuntary action of the uterus, or on the voluntary contraction of the abdominal muscles.

It would seem as though such an anæsthetic had at last been discovered, and, though I have not had an opportunity myself of practically testing its efficiency, I venture to bring the subject this evening before this Society, in the hope that some of the members, more fortunately circumstanced than I am, may be thereby induced to put its qualification to the test, and to report the result at some future meeting to the Society.

For the facts that I am about to lay before the Society I am indebted to a paper by Dr. Stanislaus Kilkowitsch, published in a recent number of the *Archiv für Gynaekologie.*[a]

The first attempt to use nitrous oxide as an anæsthetic was made in

[a] Archiv f. Gynæk. B. XVIII. S. 81.

1844 by an American dentist named Horace Wells. He got a friend of his to put him under the influence of this gas, and then to extract one of his teeth, which operation was almost painless. A new era in the history of anæsthetics was, however, inaugurated in 1847, when Simpson made his immortal discovery of chloroform, and Wells died the year after, without having lived to see nitrous oxide gas come into general use as an anæsthetic. After a time, however, the fatal cases that occurred from the use of chloroform again directed attention to this gas, and in 1863 Colton began to use it extensively in dentistry, and it soon came into very general use in this branch of the profession.

The success of this gas in America now induced several European physiologists to institute experiments as to its efficacy as an anæsthetic. Among these, some, as Herman, estimated its anæsthetic power at a very low figure; while some, as Jolyet and Blanch, denied that it possessed any such power. Herman, indeed, went so far as to say that any anæsthetic power it possessed was due to its causing suffocation, and resembled that produced by strangulation. He, at the same time, made the discovery that a mixture of four parts of nitrous oxide and one of oxygen was quite capable of sustaining animal life, but considered it powerless as an anæsthetic. Goltstein showed that while asphyxia undoubtedly accompanied complete anæsthesia produced by this gas, still the small mortality due to its use showed that this could not be to any very dangerous extent. In the year 1878 Paul Bert,[a] however, entirely disproved the assertions that had been made as to the total absence of anæsthetic power in nitrous oxide. He showed that this gas, when breathed under ordinary atmospheric pressure, produced complete anæsthesia, but that, as it was not capable of sustaining life, this condition of anæsthesia could not be maintained for any time. If nitrous oxide were mixed, under ordinary atmospheric pressure, with sufficient oxygen to sustain life, the tension of the former gas was diminished in like proportion. If, however, by means of a pneumatic machine, the mixture were exposed to sufficient pressure to restore the normal tension of the nitrous oxide gas contained in the mixture, he found that anæsthesia could be maintained for an indefinite period, without producing any symptoms of asphyxia. This method of producing anæsthesia has been carried out on a large scale in France, and many of the most serious surgical operations have been performed under its use. The advantages it has over chloroform are:—1. That the anæsthesia is produced almost immediately, and ceases as rapidly after the gas is withdrawn; 2. That nausea, headache, dyspepsia, &c., do not follow its use; 3. Vomiting does not occur either during or after the anæsthesia; and, 4. The method is entirely free from danger. The objections to it

[a] Comptes Rendus. P. 728. 2me Semestre. Gazette Médicale de Paris. 1878. Pp. 108, 498, and 579.

are that it requires such a complicated apparatus for its administration, and, further, that the operator and his assistants must work under increased atmospheric pressure.

Among Dr. Kilkowitsch's experiments on the therapeutic action of nitrous oxide was one to determine the subjective effects of breathing the above-mentioned mixture of four parts of this gas with one of oxygen. As he gradually increased the quantity of this mixture that he breathed he noticed that the effects of it were quite sufficient to entitle him to hope that it would prove of use as an anæsthetic in actual practice. Thus he observed that after taking five full inspirations he could pinch his hand, or even pass a pin through a fold of skin, without feeling any pain. After repeating these experiments several times, both on himself and on others, he determined to try what anæsthetic effect the gas would produce during labour, where the pains come on at regular intervals, and where it would be an additional advantage that the patient should retain consciousness, and thus be able to render what assistance she could by voluntary bearing-down efforts. He therefore obtained leave from Professors Slavjansky and Horwitz to try the effect of this mixture in their lying-in wards.

In the very first case in which he tried it he found his anticipations quite fulfilled, for both the subjective and objective symptoms of pain were very considerably lessened as often as the patient took from three to five inspirations of the gas before the pain commenced. In the second case the results were quite beyond his expectations. After having breathed the gas, the patient declared that she experienced no pain during the subsequent uterine contraction, though she had not in the slightest degree lost consciousness, or experienced any unpleasant sensation. The uterine contractions, as judged of by the hand placed over the fundus, continued perfectly natural, being neither lessened in number nor shortened in duration—in fact, the only effect produced was an entire absence of pain.

Before detailing the history of the cases on which he experimented, Dr. Kilkowitsch gives directions how nitrous oxide gas may be obtained from the decomposition of nitrate of ammonia by heat; but, as in this country the gas can readily be procured in the form used by dentists, it is unnecessary to enter further on this subject.

The gas when obtained is placed in a glass retort, and 20 per cent. of oxygen added, and the mixture is drawn off into a large india-rubber bag as required. Between the bag and the mouth-piece is placed a two-necked bottle containing some water, through which the gas must pass before entering the patient's lungs. This forms a sort of valve, which prevents the escape of the gas when the patient is not breathing it, and the moisture it absorbs while passing through the water prevents its producing any unpleasant sensation of dryness of the throat.

When everything is ready we must determine accurately the length of the interval between two pains, and also instruct the patient how to inspire the gas, impressing on her the importance of making deep inspirations, and retaining the gas as long as possible in the lungs. It is well, too, to warn her that the gas will produce a slight feeling of intoxication, as this may otherwise frighten her. About from half a minute to a minute before an expected pain she should take from two to five deep inspirations of the gas, which is generally sufficient to cause anæsthesia. The first time, however, in order to be certain of producing the required effect, and thus at once gaining the confidence of the patient, we should commence the administration a little earlier; for if a pain comes on before anæsthesia is produced it will prevent the patient taking any more deep inspirations. The patient soon learns how and when to inspire, and will herself apply the mouth-piece to her mouth. The effect of the gas varies in different persons in proportion to the depth of their inspirations and to the length of time they retain the gas in the lungs. It is very hard to say what amount will be required for any labour, as the duration of the labour itself is uncertain. As a rule the quantity required varies from two to ten cubic feet.

Dr. Kilkowitsch then gives the history of ten cases in which the gas was used with the effect of producing more or less complete anæsthesia, without the slightest loss of consciousness. One of these was a case of obstructed labour, in which the head had to be perforated; but, though the uterus contracted most violently, the woman experienced no pain. In one case the patient had aphasia each time she inhaled, but was quite capable of understanding any questions that were put to her. In some cases both the maternal and fœtal pulse seemed to be quickened, in others the contrary effect was produced. Once only was the child asphyxiated; but in this case the cord was found to be twice twisted round the child's neck. In every case the patient assisted the uterus by voluntary bearing-down efforts. In one protracted case as much as twenty-two cubic feet of the gas was used, but without any bad effect on the mother, who as soon as the labour was over at once returned to her normal condition.

In none of these cases had the inhalation of the gas the least perceptible effect in lessening the number, length, or intensity of the pains, as estimated by the hand placed over the fundus. But as this method of determining the force of the pains depends on the subjective feelings of the observer, Dr. Kilkowitsch determined to test the question more accurately. With this object he used the tokodynamometer of Schatz, as modified by Buchowtzoff and Smolsky. This consists of a small india-rubber bag, to which a tube of the same material is attached. The bag, partly filled with water, is passed into the uterus, and the free end of the tube is connected with a column of mercury. In this way, by

reading off the height of the column of mercury, the amount of intra-uterine pressure may be determined.

A careful consideration of the results obtained led him to the conclusion that the anæsthesia produced by this mixture was not accompanied with the slightest interference with either uterine or voluntary abdominal muscular contraction. As, however, none of the cases in which these latter experiments were made lasted more than two and a half hours, Dr. Kilkowitsch is unable to say whether a longer use of the gas might not have some such effect.

The advantages of this method may be thus briefly summed up :—

1. It is perfectly free from danger either to mother or child, and has no tendency to prolong the labour.

2. The patient never loses consciousness, even when anæsthetised to the full extent this mixture is capable of producing.

3. There is total absence of vomiting, headache, nausea, or subsequent dyspepsia.

4. The presence of the doctor is not absolutely necessary.

The chief objections to its use are that it is expensive, and not very portable.

As it occurred to me that the difficulties of carrying out this method would probably be best estimated by those members of the profession who have the greatest experience in the practical administration of the pure nitrous oxide gas, I asked my friends Dr. Stack and Mr. Pearsall to come down here this evening, but I regret to say neither of them is able to be present.

In conclusion, I would again apologise to the Society for bringing before them this subject, without having first practically tested it myself. But I trust the explanation already given may be received by you as sufficient justification for my having ventured to do so.

Dr. Henry Kennedy.—Many years ago I saw an exhibition of the effects of laughing gas in the Rotunda Hospital. The first person who took it fell off exactly as if he had been subjected to chloroform. In the next case the person became most violent. I maintain that every anæsthetic is attended with more or less danger, and that it is exceedingly wrong to countenance the idea that any patient can use it without a doctor being present. Perhaps in the cases mentioned by Dr. Macan the gas was not used to such an extent as to produce a comatose state.

Dr. Pollock.—I was lately called on to administer nitrous oxide to a boy. On being put under the influence of the gas, he struck out, and gave me a blow in the face. If the gas were given to a lady in her confinement, and she began to strike out, it would be a serious matter.

Dr. Doyle.—I have seen a portable apparatus for the administration

of nitrous oxide used by Dr. Cruise. After the patient had been got to a certain extent under the influence of nitrous oxide, it was thought desirable to substitute ether. The patient was very rapidly brought under the influence of the gas, and came to in a quarter of an hour afterwards.

Dr. Arthur H. Benson.—It should be borne in mind that nitrous oxide is often very impure. I have administered it in a large number of cases, and have seen excitement follow in only two instances. The ordinary adults and sensible individuals to whom I administered it went off without a struggle at all.

Dr. Atthill.—There can be no doubt, from the paper of Dr. Macan, that nitrous oxide will answer the object of giving temporary relief from pain to a parturient woman. But is it superior to chloroform? There is no doubt that if chloroform be given to the surgical degree, it stops uterine action, arrests labour, and predisposes to post partum hæmorrhage; but if a small quantity be given just as each pain comes on, it will afford immense relief without stopping uterine action. We know that, as a general rule, chloroform is absolutely safe in parturition, while, on the other hand, death has frequently occurred from its administration under other circumstances, and probably the same rule will hold good with respect to the use of nitrous oxide in parturition. But the difficulties in the way of using it are so great that I hesitate to recommend its adoption. I do not think any anæsthetic is absolutely safe; nor is there any anæsthetic that is suitable to every patient. I use chloroform nearly always, but in one or two cases I have been obliged to give ether. Thus once when operating for vesico-vaginal fistula, the patient nearly lost her life from the use of chloroform, but I subsequently gave her ether with perfect impunity.

Dr. Macan, in reply.—There is very little danger from the administration of chloroform in labour; at the same time it is difficult to administer it during the whole of labour, and I would never wish to do so until the second stage had commenced. But I have seen people suffer more in the first than in the second stage, and hysterical women, or those of a nervous, excitable temperament, often get quite outrageous in the first stage, but become tolerably quiet in the second. I believe that if we had a sufficiently safe anæsthetic like nitrous oxide for the first stage of labour many persons would be tempted to try it. The pains of labour are much greater than is ordinarily believed. If, therefore, we could find something that would take away the pain of labour entirely, we would relieve an incalculable amount of human suffering. Ordinary nitrous oxide is dangerous, because it produces suffocation, but if you mix with it a sufficient amount of oxygen to keep up animal life, the patient may go on breathing it for ever, and the degree of anæsthesia produced by this mixture is entirely free from danger.

The Society then adjourned.

ST. MARY'S HOSPITAL
RADFORD
LIBRARY
MANCHESTER

Saturday, February 4, 1882.

A. V. Macan, M.B. (Vice-President), in the Chair.

Craniotomy.

Dr. Atthill exhibited a fœtus on whom the operation of craniotomy had been performed under somewhat unusual circumstances. The woman had previously been delivered of three dead children. On admission into the Rotunda Hospital, a few days before the end of the full term of uterogestation, he satisfied himself that the antero-posterior diameter of the brim did not exceed three inches and a quarter. The membranes ruptured before labour set in, and on the os dilating to but a small size, a leg descended into the vagina. The pains now became powerful, but the breech did not enter the brim; the patient's sufferings were very great, and her condition became alarming. She was placed under chloroform, and Dr. Atthill, passing his hand into the uterus, found that the child's body lay in a half circle, the breech being above the right sacro-iliac synchondrosis, and the face to the left of and overhanging the pubes. The abdomen being pendulous, the greater part of the uterus, including the anterior lip, which was very tense, lay quite outside the pelvis. Being of opinion that the head could not be got through the narrow brim till it was lessened, and being aware of the difficulty of perforating the base of the skull when the pelvis is occupied by the body of a large child, Dr. Atthill attempted to effect cephalic version, by pushing up the leg and breech and bringing down the head to the brim, but finding this impossible he perforated through the forehead, the head still lying above and chiefly outside the pubes. Having effected this, traction was made on the leg, the breech was delivered, and the arms brought down by means of the blunt hook. The cephalotribe was now applied over the occiput, and delivery effected without further difficulty.

Excessive Development of Fingers and Toes.

Dr. Horne exhibited specimens of the upper and lower extremities which were removed from a female child that was born in the Rotunda Hospital on the 4th of January, and died eleven days subsequently. He said:—We have not infrequently opportunities of seeing cases where development is arrested, but examples of excessive development are not so commonly met with. The mother, a primipara, was delivered after an easy labour at full time. The child had six fingers on each hand, all of which had nails; there were likewise six toes on each foot, perfectly symmetrical. On looking at the specimens it would appear as if there were six metacarpal and six metatarsal bones; but the dissection showed that

the fifth metacarpal bone bifurcates as it were into two heads, and the fifth and sixth fingers spring from it. From this fact important surgical knowledge is furnished in connexion with the removal of similar appendages. It was only a few days ago that a child was brought back to the Hospital to have an extra finger removed. At the time of birth it was difficult to decide which finger should be taken off; but now, as it had reached the age of six months, it was plain the outermost finger was the impediment, as it did not allow of any flexure owing to the absence of any muscular supply. Excess in the extremities, especially with reference to the number of fingers and toes, is not unusually hereditary; on the mother's side no such history was to be obtained, but the grandmother, on the father's side, had six children, three of whom were monsters, but the nature of the deformities I could not elicit.

Myxoma Uteri.

Dr. Atthill exhibited a mucous growth removed by him on the previous day from a patient in the Rotunda Hospital. The woman had come under his care three years ago suffering from profuse uterine hæmorrhage, having been confined a year or so previously. He dilated the uterus, but found nothing except a thickened condition of the uterine mucous membrane. He had applied nitric acid, and sent her home apparently well. She again sought admission last week, and stated that the hæmorrhage returned within a month after she left the hospital, and had continued, off and on, ever since. On examination the uterus was found to be elongated to the extent of half an inch, and the fundus to be antiflexed. Dr. Atthill again dilated the uterus, and chiefly by means of Hegar's dilators—that is, he introduced three pieces of sea-tangle on Thursday morning, left them in for twenty-four hours, and then commenced with No. 7 of Hegar's dilators. In three-quarters of an hour he reached No. 20, which enabled him to introduce the finger with ease. On doing so he felt, at the upper extremity of the uterus, a soft mass—so soft that it was useless to attempt to seize it with a vulsellum. He therefore introduced a curette, and, using it in a rotatory manner, brought away the mass now exhibited, which was nothing but mucous membrane hypertrophied and very vascular. It was removed in soft jelly-like masses, and extended apparently over a space about the size of a shilling at the fundus of the uterus. The whole growth was removed perfectly, and then nitric acid was freely applied. To-day the woman was perfectly free from pain or discomfort, and would doubtless make a rapid recovery. Dr. Atthill considered the case of some interest, as being an example of a non-malignant recurrent growth from the mucous membrane of the uterus—a matter of infrequent occurrence.

Four Cases of Convulsions occurring in the Rotunda Hospital. By Richard Henry, M.D., Q.U.I.; L.R.C.S.I.; Assistant Physician, Rotunda Hospital.

Convulsions is one of the most alarming and dangerous of the complications of labour, and much difference of opinion exists as to the best method of treatment, specially as to the value of *blood-letting*. I therefore think the details of the following cases may prove interesting and useful. They occurred in the Rotunda Hospital during the months of April and May, 1881, and present points of difference useful in practice:—

Case I.—M. O'T., a private patient in her sixth pregnancy, was admitted on the 8th April. After a rapid and easy labour she was confined of a strong, healthy male child at 10 30 p.m. At 4 o'clock a.m. on the 10th, thirty hours after delivery, she suddenly screamed out while asleep, and had an epileptic fit. The fit was soon over, and was followed by low incoherent muttering, with eyes wild and staring, and pupils widely dilated. In ten minutes she was quite rational, the pulse and temperature being normal. When visited next morning she stated that she was quite well, had slept, and never felt better—in fact, she knew nothing whatever about the fit. Chloroform was not administered, but a draught of syrup of chloral and bromide of potassium.

On the 11th and 12th, at the same hour in the morning, the fit (a single one) recurred, but the chloral draught was not repeated.

On inquiry we found she had been in an asylum three months after her fourth pregnancy, and that within the last fourteen months she had at her menstrual periods an epileptiform fit in her sleep, usually recurring a second night. I may say she knew nothing of the three fits she had, and we did not undeceive her. She made a rapid recovery, leaving hospital on the tenth day. No treatment was adopted with a view to cure.

Case II.—C. M., a primipara, was admitted to hospital on the 23rd April, at 4 30 p.m. Just as the second stage of labour was commencing, she had an epileptiform fit. Her pains had been severe, but suddenly ceased a moment or so before the fit, her face becoming very pale. She was at once delivered, under chloroform, of a healthy, living female child. She had general anasarca, and her urine, drawn off by catheter, turned nearly solid on boiling. She was ordered pulv. jalapæ co., gr. 40, and calomel, gr. 5.

At 6 o'clock p.m. she had a second fit, which recurred every second hour till midnight. During each fit, and for some time after, chloroform was administered. At 9 o'clock p.m. she was ordered a second dose of calomel and compound jalap powder, and an enema of castor-oil and turpentine in gruel; and, as the bowels remained obstinately confined, two

drops of croton oil were given in mucilage at 12 o'clock midnight. Up to this the patient was almost completely unconscious.

The fits ceased till 4 o'clock a.m., from which time till 9 30 a.m. she had eleven fits at intervals of half an hour, increasing in violence, the patient being unconscious in the intervals. Her condition was now becoming alarming. As the bowels could not be got to act, and the coma was becoming profound, Dr. Atthill decided to bleed her freely. Accordingly twenty-four ounces of blood were taken from the arm, ten grains of calomel were placed on the tongue, and the enema of castor-oil and turpentine was repeated. Her head was shaved and blistered. She had no fit till 12 20 o'clock, when the seventeenth and last occurred. Two drops of croton-oil were now administered, as there was no motion from the bowels. At 4 o'clock p.m. they acted three times, and consciousness gradually returned.

25th, 9 o'clock a.m.—Patient slept well; quite conscious. Up to this date the catheter was passed regularly.

26th.—Patient had at 4 o'clock a.m. five grains of calomel, followed by a black draught. As the bowels did not act, this was repeated at noon, and an enema of soap and water was given at 6 o'clock p.m., after which the bowels were well moved. From this time the patient made a rapid recovery, the temperature never having risen above 100°, and the pulse rapidly falling from 120 to normal. The anasarca and albuminuria rapidly disappeared, and after a not very prolonged stay in hospital she was discharged cured.

Case III.—M. S., primipara, was delivered on May 7th, at 8 30 a.m., and in a few minutes after, and before the placenta was expelled, she suddenly complained of becoming blind, and had a convulsive fit. Chloroform was administered, and the placenta was pressed off. As the breathing became apoplectiform, the chloroform was not pressed, as in the last case. The blowing respiration being more perceptible on the right side of the face than on the left, paralysis of the left arm and leg was dreaded, but did not take place. The patient soon became conscious. She was ordered compound jalap powder and calomel; also thirty grains of chloral hydrate.

In four hours, at 12 30 o'clock p.m., the second and last fit occurred, when two drops of croton-oil were given, followed by soap and water enema. The urine was strongly albuminous, but beyond a slight puffing of the ankles there was no anasarca. At 6 o'clock p.m. the bowels had moved *five* times, and the patient had passed water. The fits did not return, and scarcely a trace of albumen was found on the fourth day. The patient very soon recovered.

Case IV.—E. B., sixth pregnancy, was confined of a male child, alive, on 12th May, at 11 o'clock p.m. At 3 p.m., on the 13th May,

sixteen hours after delivery, she was seized with an epileptic fit, chloroform was administered, and, on her recovering consciousness, jalap and calomel. In this case there is a distinct history of epilepsy with aura, the patient stating that the fit can be stopped if her hands are caught soon enough. The fit did not recur, and her recovery was unretarded.

In these four cases the distinction between true epilepsy and epileptiform convulsions is well-marked, the fit in the former not recurring except at the distant intervals the patient is accustomed to, and being no hindrance to recovery—in fact, no particular importance was attached to the fits in the *first* and *fourth* cases once their true nature was apparent.

Again, in the second and third cases there is a marked distinction. In the second the anasarca was general, invading the face, arms, and legs, while in the third case the anasarca was confined to the ankles. In the second case the fits commenced before labour was concluded, and in the third when it was practically at an end. The second was infinitely more serious, and the question suggests itself whether the greater amount of uræmia not only brought on the fits before labour ended, but also increased their number and severity after it was concluded. The number of the fits (seventeen), the profound unconsciousness, the obstinacy of the bowels, and the good result following the old-fashioned practice of bleeding, and, above all, the complete recovery of the patient, are features worthy of note.

Again, the question arises—Does the bleeding by speedily lessening the amount of uræmia, and by emptying the blood-vessels, rapidly permit the resumption of nervous energy or tone of both cerebral and sympathetic nerves, as shown by quickly returning consciousness on the one hand, and, on the other, by the satisfactory motions from the bowels, as both systems seemed profoundly paralysed by the poison? Also—Are there not plethoric cases in whom convulsions might be more speedily cut short, and more safely also, by *bleeding* than by any newer method? I remember a case eleven years ago in the country, similar to the second case, in which the patient was bled to forty ounces before the fits ceased. No chloroform was used, and the patient made a good recovery.

The third case was remarkable for the apparently apoplectiform nature of the first fit—no hemiplegia following, though one side of the brain seemed more engaged than the other. The importance of convulsions is my excuse for bringing the subject before the Society.

Dr. Kidd.—The apology with which Dr. Henry concluded his paper was quite unnecessary. The subject is of very great interest and importance. His first case was evidently one of epilepsy. His fourth case is interesting as showing that epilepsy occurring during labour is not such a very serious affection as uræmic convulsions. That point is

very clearly and conclusively established by the paper, and, as far as my recollection goes, it is a point on which the books are particularly obscure. I have myself bled in cases of convulsions, not, I think, as a rule, with the good effect that Dr. Henry has specified in his case. As to the use of chloroform, when this subject was debated on a former occasion I ventured to express the opinion that chloroform is scarcely advisable where you have convulsions going on. Purging is the remedy on which, under such circumstances, I am chiefly inclined to rely. It is exceedingly difficult to get the bowels to act; and, in several cases in the Coombe Hospital, we have not hesitated to give 20 grains of calomel, and even combining that with some croton oil. The best of our recent observers have noted the good effects of large doses of calomel in cases of uræmia from kidney disease.

Dr. More Madden.—It appears to me impossible to discuss together with any advantage the general treatment of diseases so essentially distinct as the different forms of puerperal convulsions, of which Dr. Henry's paper furnishes us with examples. For instance, the hysterical form of the disease is one requiring little or no treatment of any kind, whereas epileptiform puerperal convulsions, whether uræmic or not, always require the most active prophylactic and remedial treatment. Still more essential is such treatment in the sthenic or apoplectiform variety of puerperal convulsions, which may be either merely a later stage and more profound degree of the last-named form, or may assume its distinct apoplectiform character *ab initio*. Of the value of large purgation, counter-irritation, and cold effusion in such cases, there can be no question. As to chloroform, all the benefit I have seen from its use was to allay for the time the convulsions, and thus aid in gaining time to effect delivery, which must be always a primary consideration in the treatment of these cases. As to chloral and the many remedies which I have seen tried, all I can say is, that in any grave case of true puerperal convulsions time is far too precious to be wasted in trying experiments with such doubtful agents when life is thus hanging in the scale. In such cases, and I now speak of sthenic or apoplectiform convulsions, bleeding is the only reliable remedy, and I have no doubt that to save the life of a plethoric patient suffering from apoplectiform convulsions we must still bleed as freely as our ancestors did a hundred years ago, or else the patient will die as such patients did during the interval of time when bleeding was driven as completely out of midwifery as it was out of every other branch of medical practice. In the treatment of the apoplectic form of convulsions we have no resource equal to large and free bleeding; it is only by the bold use of the lancet that we can hope to save life in grave cases of this kind.

Dr. Purefoy.—It has fallen to my lot to have seen a good many cases of puerperal convulsions, and the only case of recovery was one in

which the woman was freely bled. I saw a case of a primipara in puerperal convulsions which appeared perfectly hopeless. She was in the sixth month of her pregnancy, but was saved by free bleeding. I cannot go quite so far as Dr. Madden does as regards the use of chloroform. Some time ago I laid before the Society notes of three cases in which I used hydrate of chloral by injection, I think, with good results. The free purgation that Dr. Kidd alludes to is a measure of the greatest value.

Dr. Atthill.—The real point we are debating is the value of bleeding and of chloroform. As to the administration of purgatives there is no difference of opinion. Everyone approves it; but there is a decided difference of opinion as to the value of bleeding and of chloroform. I have been in the habit of bleeding occasionally in convulsions, and during the whole of my career I have never seen it do harm—sometimes it seemed to do no good, while on several occasions I have seen excellent results follow. A more hopeless condition than that of the patient referred to by Dr. Henry could hardly exist. She appeared to be dying; she had stertorous breathing, quick small pulse, rapid respiration, and was totally unconscious. Every effort had been made for several hours previously to check the fits and to relieve the bowels without any avail. Under these circumstances I determined to bleed, and did so to the extent of about 20 ounces. The effect of it was very marked. First, the interval between the fits lengthened—there was an interval of three hours without a fit—then the bowels gave way, and from that time her condition rapidly improved. There was no indication of the bowels acting until after blood had been abstracted, though calomel, jalap, and croton oil had been freely administered. A few hours after the bleeding the bowels acted. My impression is that the bleeding lessened arterial tension; consequently the bowels became relaxed and the purgative acted. Chloroform acts in the same way. I do not think that chloroform and bleeding are to be put in comparison as modes of treatment, as their action is different. Chloroform sometimes stops convulsions; it frequently retards them; but it is not curative. We give chloroform, and at the same time we administer purgatives. The purging, by relieving the congestion of the kidneys and by relieving the system, generally acts in a curative manner. Chloroform is only an expedient to procure the cessation of convulsions till the other treatment acts; and it is not to be pursued too far. When the coma becomes permanent, chloroform ceases to be indicated and is injurious. From the cases brought forward by Dr. Henry, we learn that bleeding is a most valuable agent in suitable cases. Where you have a strong plethoric woman who will bear bleeding, and where there is evident congestion, and where you have derived no benefit from the exhibition of purgatives or of chloroform, it is indicated.

Dr. Henry Kennedy.—Many years ago a case of convulsions came

under my notice in which there was artificial delivery, but the convulsions went on and she died. I made a *post mortem* examination, and found that the brain was literally torn into bits. The impression the case conveyed to me was that the patient was in a state of extreme plethora. The state of plethora does not appear to me to be recognised as distinctly as it deserves.

The Chairman.—I think we ought to keep the different forms of convulsions separate in treatment. The treatment of ordinary uræmic puerperal convulsions is, I think, much the same as of convulsions occurring in Bright's disease. That apoplectic convulsions, which depend on anything like effusion into the brain, ought to be treated according to the ordinary principles for the treatment of apoplexy is also, I think, obvious. Uræmic convulsions may, by causing increased tension of the blood-vessels of the brain, lead to rupture and consequent apoplectic convulsions; and one object of treatment should, therefore, be to quiet the convulsions. Bleeding lessens the tension, but, on the other hand, it renders the blood more watery, and so increases the probability of the convulsions being repeated. It is obvious, therefore, that all forms of puerperal convulsions cannot be classed together as though they depended on the same cause. Morphia is used to prevent a convulsion taking place. As regards curative treatment, we should separate convulsions occurring before, during, and after labour. As long as there is a child in the uterus our efforts should be principally directed to removing it; and until that is done it would, I think, be premature to bleed the woman.

Dr. Henry, in reply.—It is plain that a distinct line is not drawn in the books between the different sorts of convulsions. My second case shows clearly where you are to bleed. I think, however, that Dr. More Madden goes, perhaps, too far in his advocacy of bleeding. With regard to the advantage of strong purging, we have two cases in hospital at present which illustrate it. Both women were confined of twins, and in both cases the children were very large. One had two living children and the other two dead ones. One of the patients was under treatment for a considerable time and the other for a very short time. Their systems were so far unloaded that, notwithstanding the double labour and the extra risk, no symptoms of convulsions ensued.

The Society then adjourned.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

President—William Stokes, M.D., F.R.C.S.I.

Secretary—E. H. Bennett, M.D.

Cerebral Hæmorrhage.—Dr. Duffey exhibited the brain of a young unmarried woman, aged twenty-four, which he had removed, a few hours before the meeting, from the body of a late patient of his colleague, Dr. Mason. She was a tall, well-made, robust-looking person, of fair complexion, and possessed a considerable amount of adipose tissue. She was admitted into Mercer's Hospital on the 21st November, with left hemiplegia. Six months previously, when engaged in "washing out a room," she became suddenly unconscious. On regaining consciousness she found she had lost the use of her left side. She went into an hospital, and after some months regained a little power, being able to walk—with, however, a characteristic hemiplegic gait—and able also to elevate the left arm slightly, and flex the fingers. She was otherwise in good health, until on the 19th November she felt heavy and dull, and for this she sought admission to hospital, but made no other complaint. There was no history of any previous illness. On the evening of the day following her admission—during which she expressed herself as feeling quite well—while quietly reading in bed, the book fell from her hand, her face flushed, and there were slight convulsive movements of both sides of the body, more particularly of the left (the paralysed) side. In about five minutes these movements subsided. She became completely unconscious; the breathing was stertorous, hurried, irregular, and intermittent; pulse rapid, 130, weak and irregular; the temperature rose to 101·4°, and the urine and fæces were discharged involuntarily. There was absence of reflex movements. The pupils remained sensitive to light; they were alternately contracted, and dilated regularly; the eyeballs were at first rotated to the left side; afterwards temporary divergent strabismus was noticed. The left side was permanently rigid until her death, which occurred about thirty-six hours after the seizure, and the right was paralysed.

In removing the brain the blood-vessels of the dura mater were found turgid. The vessels of the surface of the brain were also very full of blood. There was a slight deposit of lymph at each side of the great longitudinal fissure near the vertex, and anteriorly the hemispheres were adherent to each other. The membranes covering the right hemisphere were opaque and cloudy. On removing the upper half of the right

hemisphere a considerable quantity of serous fluid escaped. On examination this was found to come from a cyst situated in the medullary substance of the hemisphere, external to and pressing on the corpus striatum and optic thalamus. The remainder of the fluid contained in the cyst was of a yellowish colour, and slightly turbid. The cyst-wall was well-defined; it was composed of fibrous tissue, and stained of a light reddish-yellow colour. It was entirely extra-ventricular, and measured $3\frac{1}{2}$ inches in length, and $\frac{3}{4}$ inch transversely and vertically. In a corresponding position in the left hemisphere was a very large recent hæmorrhagic clot. The extravasation had not broken through into the ventricle, although the immediate surrounding brain tissue was disintegrated. The heart weighed $15\frac{1}{2}$ ounces. The left ventricle was greatly hypertrophied. It was four inches in length, and the section of its anterior wall measured $1\frac{1}{4}$ inch. Its cavity was not dilated. The flaps of the mitral valve were considerably thickened, and there was slight stenosis of the orifice. The aortic valves were healthy. The kidneys together weighed 12 ounces; they were congested—as were also the liver and spleen—but appeared to the naked eye otherwise normal. There had been no time for a microscopical examination of them as yet, nor had the cerebral vessels yet been minutely examined. It was probable that there was local disease of them, especially as the arch of the aorta, although elastic, was slightly atheromatous. Both lungs were mottled with patches of pigmentation, and were emphysematous at their edges. The left lung was in a state of acute hyperæmia. Dr. Duffey remarked that the interesting points in the case were—(*a*) the age, sex, and previous history of the patient; (*b*) the presence of a large well-defined cyst, containing fluid only, in the right hemisphere, and of an extensive recent "apoplectic focus" in the left hemisphere—their appearances coinciding with the dates of the seizures, which, especially the fatal one, occurred apparently without any exciting cause; (*c*) the evidence of previous, or coexisting, meningeal inflammation; (*d*) the existence of marked hypertrophy of the left ventricle, with slight mitral stenosis (a rare association) and comparatively trivial aortic atheroma, in the absence, as far as microscopical examination went, of renal disease. Dr. Duffey thought it probable that future careful examination would show the existence of local changes in the walls of the cerebral arteries. Without further investigation, which time had not permitted, it was difficult to account for the ventricular hypertrophy; but he regarded the cerebral hæmorrhage as being only remotely dependent upon that.—*November* 26, 1881.

Disease of Kidneys consequent on Stricture.—Dr. Duffey said: In the absence of my colleague, Mr. O'Grady, I exhibit the kidneys and bladder of a patient who was recently under his care. The subject was

a discharged soldier, fifty-four years of age. He was admitted into Mercer's Hospital on the 7th October, suffering from a very tight stricture, which yielded to treatment by gradual dilatation. The urine he passed was clear, and contained no pus, but was intermittently albuminous. He complained slightly of pain in the loins, especially on the right side. On the 23rd of November he had an apparently unaccountable attack of very severe hæmaturia. A large quantity of blood was passed *per urethram*, so much so that he was quite blanched by the loss. The following day he complained of intense pain in the penis and in the bladder. Two days subsequently another gush of hæmorrhage occurred. There was an interval of two more days, and then a third attack of hæmaturia took place. All this happened within a week. He then became semi-unconscious. Cerebral symptoms supervened, accompanied with incontinence of urine and involuntary defæcation, and he died on the 7th November, seven days after the first attack of hæmaturia. He had no other symptom during life; he had no cough, and there was no history of syphilis or of any injury. Mr. Gaffney, the resident medical officer, who made the *post mortem*, informs me that the lungs, heart, and liver were perfectly healthy. The kidneys [exhibited] are both much enlarged. The right kidney, with its capsule—which is thickened and adherent to the surrounding tissues, but not to any other organ—weighs $17\frac{1}{2}$ ounces. It preserves its shape, although it is rather rounder than the normal type, and on its surface there are some large nodules, and at its extremity a larger mass, soft and semi-fluctuating, which seems to have been formed by the coalescence of several smaller nodules. There are a great number of patches of ecchymoses over the kidney, and the whole tissue of the gland is extremely disorganised, particularly the cortical portion, where small growths of a greyish or yellowish colour are observable. Some are softer than others, and some coalesce, forming small abscess-like cavities. The walls of one of these cavities show some signs of hæmorrhagic extravasation. On section of the kidney these growths can be extremely well observed. The portion of the kidney which is not encroached on by this disease appears to be fatty. At one place one of the masses has opened through the external tissue. The other kidney presents somewhat similar appearances, though not so well marked. The right ureter was slightly dilated, and in some places it contained small blackish nodules of pigmentary matter. On the left side the ureter was dilated in some places and contracted in others. The walls of the bladder are somewhat hypertrophied, and the mucous membrane presents a peculiar stained appearance, persistent after repeated washing, which is due apparently to hæmorrhages underneath the mucous membrane of the bladder. Although there are some little indentations, no marks of ulceration can be observed on the surface of the mucous membrane, otherwise the bladder and prostate appear to

be healthy. The spleen is very much enlarged, and extremely diffluent and pulpy in character. There is no enlargement of the inguinal, mesenteric, or any other glands of the body. Not having been able as yet to make a microscopic examination of the specimen, I am unable to say what the precise nature of the new formation in the kidney is. In some respects it resembles malignant disease, in other respects tuberculous.—*December* 3, 1881.

Abscess opening into the Bladder.—Brigade-Surgeon Jackson communicated the following case of vesical disease: Private E. Parkes, Coldstream Guards, age twenty-three; service two years; admitted Oct. 16, 1881; died Dec. 12, 1881; disease, vesical abscess. [For the notes on this case I am indebted to Surgeon Barrow, A.M.D., who had charge of Private Parkes during his illness, and I have seldom met with as careful a record as Mr. Barrow made, and I regret that he is not here to bring the case before the Society, as he purposed. He is now on his way to South Africa on duty.] On admission Private Parkes suffered from a discharge from the urethra, and difficulty in passing water. On the 24th October he had retention of urine, due apparently to spasmodic stricture. The bladder was greatly distended, and he suffered from the great pain usual in such cases. After some little difficulty a No. 11 catheter (elastic) was passed, a slight stricture in the membranous portion of the urethra was detected, and extreme pain was caused by the catheter when passing the prostate. The urine was thick, and very offensive (of exactly the same odour as extravasated urine), and contained a large quantity of albumin, and under the microscope epithelium, pus, and a very few crystals of triple phosphate were seen.

Oct. 24th.—The catheter was tied into the bladder, and kept there till the following morning, when it was removed by the ward-master, as it was causing great pain, referred to neck of bladder. After two hours the bladder was again distended, and after several trials with different-sized gum-elastic catheters No. 11 was passed. The urine drawn off was very fœtid.

25th—The bladder was found distended, the catheter having slipped out during the night. It was then found impossible to pass a catheter of any description more than $7\frac{1}{4}$ inches. On removing the instrument from the urethra it was followed by a discharge of about two drachms of thick, healthy-looking pus; some urine dribbled away now and then, but the patient was in great pain from the distension of the bladder; he was then placed in a hot bath, and while in it managed to pass several ounces of urine in driblets. The catheter was again tried, but failed to pass. While asleep he passed about a pint of urine during the following night, and afterwards urine dribbled from the bladder, still very fœtid. His appetite was good, and there was but slight constitutional disturbance.

It was considered that the symptoms pointed to abscess of the prostate and sympathetic cystitis. The prostate, when examined per rectum, did not seem to be very much enlarged or tender.

26th.—The constitutional disturbance was more marked; his appetite, however, continued fair; the urine dribbled away constantly, and was of the same character; bowels loose. The catheter was tried, but failed. The hot baths to be continued.

27th.—Did not sleep so well last night, and appetite failing. Pulse somewhat rapid in the morning, and evening temperature 99°.

28th.—Condition less satisfactory. He complained of pain about the bladder, which was partially distended. Pulse was weak, and he passed a restless night. The urine was still offensive, and dribbled away. Surgeon Myers, of the Coldstream Guards, Surgeon Cumming, of the Scots Guards, and the medical staff of the hospital, in consultation decided to give Parkes chloroform, and in the event of failing to pass a catheter to puncture bladder per rectum. At 1 30 chloroform was administered; and as none of the medical officers succeeded in passing an instrument into the bladder, Mr. Barrow perforated the bladder per rectum with the ordinary trocar and cannula. About a pint and a half of the most fœtid dark-green urine escaped through the cannula, mixed with pus, and the latter portion was almost dark pus alone. Warm water was then injected, but soon returned quite clear. Upon return of consciousness the patient was placed in bed, the cannula being tied *in situ*. Immediate relief followed the operation.

29th.—Slept till 3 a.m., and states there was a free discharge of urine through the cannula till he awoke, when it began to dribble from the urethra. On examination the instrument could be felt *in situ* through the rectum, and on withdrawing it a little a few ounces of very dark offensive pus escaped. Pulse very feeble. Brandy was ordered.

30th.—No material change. Solution of carbolic acid, 1 to 80, was injected through the cannula, and returned mixed with offensive pus; the shield of the cannula quite black; urine, less offensive than previously, trickled from urethra; pulse weak; tongue furred.

Nov. 1st and 2nd.—During these days he appeared to be somewhat better. Tongue cleaner, slept fairly, and appetite improved; the urine trickled from the urethra, and ceased to be offensive; a little pus escaped through the cannula; the injections of carbolic solution were continued, and warm baths employed twice or thrice daily. On the evening of the 2nd, Mr. Barrow tried to pass a No. 6 gum-elastic catheter through the urethra, but failed, and also with a smaller instrument; very weak adhesions broke down with the very slightest pressure, and finally the instrument was arrested by running into a false passage. Urine passed through the catheter while it was in the urethra. There was no

hæmorrhage, but small quantities of lymph came away with the urine. The cannula remains in the bladder.

3rd.—Continues in much the same state. He states that, when his bowels acted this morning, urine escaped freely from the urethra, and that he was able to retain it at will. The discharge from the cannula not purulent; general state fair. 2 p.m.—With the consent of the surgeon of his battalion and the medical officer in charge of the case, Mr. Wheeler was asked to give the benefit of his advice; and after a careful examination of the patient and consultation with the medical staff of the hospital, it was considered advisable to remove the cannula and endeavour to introduce a catheter. After several trials a No. 10 gum-elastic was passed, but it apparently entered the false passage below the prostate and to the left. Urine came through the catheter. The operation was followed by little constitutional disturbance; his temperature that night, 98·4°. Opium suppositories were used.

4th.—In the evening his temperature rose to 103·4°; pulse 115; did not complain of pain; bladder not distended; no urine passed through the urethra since 3 p.m. yesterday; a large quantity escaped through the rectum; he looks better. Morning temperature 99·9°; pulse 88, rather small and wiry.

There was little change to record until the 10th, when the left testicle became swollen and extremely painful. The testicle was punctured by a fine trocar, and great relief was thus obtained. His temperature rose to 104°. Catheters of varying sizes, from No. 3 to 8, were tried, but did not pass into the bladder.

22nd.—Suffered from severe pain during the preceding night, referred to the region of the stomach; no pain on pressure over the abdomen. The temperature continued high, ranging from 103° in the morning to 104° at night.

28th.—Was delirious last night. It appeared he had a rigor early this morning.

Dec. 2nd.—The general debility more marked. After a consultation it was thought advisable to cut down on the point of obstruction in the urethra, which was done by Surgeon Barrow. On the 3rd, the patient being under chloroform and in the position for lithotomy, a grooved staff being passed as far as the stricture, the urethra was laid open for about an inch, and was found to be much dilated; urine and pus in small quantities flowed through the wound. A catheter was passed into the bladder and tied in. For some days he seemed to improve; the temperature kept nearly normal. On the 10th he was very low, and he took but little nourishment; the debility increased on the 11th, and he died at 12 20 a.m., 12th December.

Post mortem examination, thirty hours after death:—

Brain.—Weight 45 oz.; membranes somewhat thickened; substance

of brain firm and healthy. *Lungs.*—Right, healthy; left, pleura slightly adherent; lung congested in some degree. *Heart.*—Weight 14 oz.; natural. *Liver.*—Weight 50 oz. *Kidneys.*—Right, weight 11 oz.; enlarged; capsule firmly adherent; several circumscribed masses, varying in size from a pea to a filbert, were seen in the cortical portion. These were of a buff colour; surfaces bulged upon incision, and a thin purulent fluid could be expressed from them. The hilum contained a small quantity of pus; the ureter was somewhat dilated. Left—weight 7 oz.; apparently healthy. *Bladder.*—About the size and shape of a small lemon; walls half an inch thick; mucous surface dark purple. To the right of the floor of the bladder a small circumscribed opening, through which the little finger easily passed, communicated with a well-defined sac, from which a thin pus escaped into the bladder. The sac was about the size and shape of a cocoa-nut, and its walls, about $\frac{3}{16}$ of an inch thick, were lined by a membrane of the same colour as the mucous surface of the bladder. The upper surface of the sac was covered by the peritoneum, to which it was firmly adherent. There was no mark of the puncture into the bladder through the rectum on the mucous surface of the bladder, but in the rectum a small cicatrix could be seen. About half an inch from the neck of the bladder a false passage, leading round the outside of the bladder and extending about two inches from the urethra, was seen. The urethra was open for about an inch (made at the time of the operation), and the wound extended to within an inch of the neck of the bladder.

Surgeon-Major Myers (Coldstream Guards) remarked that at first there was a difficulty in making a diagnosis of the case, and for some time they were disposed to believe that the abscess was connected with the bladder. For his part he thought the case one of sacculated bladder.

Mr. Wheeler said an opportunity was given to him of seeing the case three or four days ago. His opinion was that there was a distinct abscess quite separate from the bladder, and that the portion of tissue to which he now pointed belonged to Tyrrell's fascia.

Report of Committee of Reference on Brigade-Surgeon Jackson's case.—In reference to the specimen presented by Brigade-Surgeon Jackson, we have to report that of the two opinions expressed at the debate—namely, that the cyst which communicated with the bladder was the sac of an abscess, or that it was a sacculus of the bladder—the former appears to be correct, while the latter is untenable. The grounds for this decision are, that the walls of the cyst are formed of the condensed pelvic areolar tissue and fasciæ only, and that no trace of a mucous membrane or of any muscular fibres of the bladder are discoverable in its structure.—*January* 14, 1882.

ST MARY'S HOSPITAL RADFORD LIBRARY MANCHESTER

Traumatic Dislocation of the Left Hip ; True Ankylosis of the Right in the same individual.—Dr. Bennett said : The specimen I submit to the Society presents two of the very rarest conditions of the hip-joint. On the right side there exists complete and firm ankylosis of the hip, which is a condition sufficiently rare in itself. On the opposite side there is present a complete dislocation of the hip backwards and outwards. From the pathological details of this example I pronounce it to be a traumatic dislocation. I have no history whatever of the specimen, which has come here for dissection. The subject was probably about sixty years of age. The condition of the muscles around these two joints is what one would expect to meet in such a state of affairs. On the left side there is very free mobility, with a great approximation of the trochanter to the crest of the ilium, while the limb is shorter than its fellow by two and a half inches. The glutei were greatly wasted, degenerated to a fourth of their size, and infiltrated with fat. The external rotator and the obturator muscles showed unusual strength, while they were very intimately adherent to the false capsule. On the right side the muscles of the gluteal region were simply membranes, without any muscle tissue whatever. The appearance of the psoas and iliac muscles on the dislocated side was remarkable. The iliaci were fully developed, while the psoas had almost entirely disappeared. The tendon was drawn tightly over the extended capsule in front, and the whole of the power that existed was due simply to the development of the iliacus internus. On the opposite side, that of the ankylosis, the iliacus was atrophied, while the psoas was hypertrophied. This must have been due to some very peculiar action of the individual as he walked. With respect to the osseous ankylosis of the hip it is not necessary to say more than that it is of the form that leads us to the conclusion that it was an ankylosis that occurred in the adult state, as contrasted with the more common form of ankylosis of the hip, which is the result of morbus coxæ in childhood. There are no evidences of strumous morbus coxæ here. We have a large and fully developed bone, greatly thickened and hypertrophied at the neck and head, while the portion of the bone which is thrown out of the line of pressure is atrophic. Such appearances are most common in cases of the more rapid form of arthritis in the adult, which originates from synovial rather than from osseous disease. The bone has been greatly thickened by the supervention of inflammatory action. On the opposite side we have three conditions to select from for diagnosis. There is no doubt about the dislocation of the hip; but, in the absence of history, the question arises, whether it was congenital, pathological, or traumatic. I think there are sufficient characteristics to determine this. First, the attitude and appearance of the femoral head, its structure, the size and shape of it, and its condition, altered by the supervention of rheumatic arthritis, are all points that exclude the idea of congenital dislocation.

The atrophic head of congenital dislocation is totally unlike what we have here. As to the possibility of pathological dislocation, it might be that this man had destructive disease simultaneously in both hips. If we regard the enormous strength of the capsule and of the ilio-femoral ligament on which the weight of the body was borne, and the great development of the external obturator tendon, which passed beneath the head of the bone, I think we may infer that these are not appearances due to morbus coxæ. The capsule in front shows an extreme degree of thickness and strength. Contrasting this with the corresponding part on the other side, where morbus coxæ evidently occurred, the thickened capsule and muscles were blended on the anterior and inner aspect of the joint into a hard gristly mass of such density that it was at one time not clear that the whole angle between the femur and pubes was not filled with bone. It was not until we cut through this tissue, which was as thick as shoe leather, that we were able to clear the bone. This contrast, together with the fully-formed socket, eburnated by chronic rheumatic arthritis, which has been formed to support the head of the bone, shows that the dislocation is traumatic. The capsule is thinnest at its posterior aspect, and there the small rotatory muscles are so united with it that it was next to impossible to separate them by dissection. The digital fossa of the trochanter is altered in shape. The fossa is filled up, and the face of the trochanter major is altered chiefly in direction of the plane of its external surface. This proves that the dislocation occurred probably in early life, as compared with the period at which the changes occurred in the opposite hip. I am inclined to infer that the order of events was—traumatic dislocation of the hip in youth, and, subsequently, in adult age, and, after the dislocation had long existed, arthritis of the opposite hip, arising from some independent cause, which led to the osseous ankylosis. The acetabulum has almost disappeared under the pressure of this great ligament on the side of the dislocation. The most conclusive point of all in the pathological detail is the nature of the new acetabulum. It will be found that if one passes the finger behind the bone there is a great crest of sharp bone, forming a false acetabulum to support the head. Such an osseous cup is formed neither in the congenital nor pathological dislocations of the hip; and the absence of both congenital and pathological causes of dislocation point, by the way of exclusion, to a traumatic origin for the lesion.

The PRESIDENT remarked that another argument against the lesion being congenital was the direction of the head of the bone. The late Professor Smith directed attention to this, showing that in a congenital case which he had observed the direction of the head was forwards and not backwards. There was nothing of that sort here.

DR. BENNETT.—We have the tumour formed by the head posteriorly in this case.

Dr. Macan.—If you had a congenital dislocation of the hip like that it would lead to some obliquity of the pelvis.

The President.—The very atrophic condition of the femur is also against its being congenital. It was fortunate for the man that the ankylosis took place in such a position. As a rule the femur becomes more or less flexed when the ankylosis takes place, which renders the limb practically useless. Here a very good position occurred, whether from artificial circumstances or not we cannot say.—*January* 28, 1882.

TREATMENT OF TONSILLITIS AND HYPERTROPHY OF THE TONSILS BY BICARBONATE OF SODA.

Dr. Armangué reports in *Revue de Thérapeutique* seven cases of tonsillitis cured in less than twenty-four hours by the bicarbonate of soda. This method of treatment was introduced by Dr. Giné, Professor of Clinical Surgery, who employed bicarbonate of soda locally either by insufflation or directly applied by the finger of the patient. The applications should be frequently repeated until the disease disappears. Dr. Giné relates dozens of cases in which a cure was accomplished in less than twenty-four hours, and has never seen this method fail to produce a good effect. The alleviation is almost always immediate, and is never long delayed. Its efficacy is especially marked in the prodromal period of tonsillitis, when it will invariably abort the disease. According to Dr. Giné, bicarbonate of soda does not diminish the predisposition to anginas, but only arrests their development. Excision of the tonsils is a useless operation in cases of hypertrophy of the tonsils, since the hypertrophy can be rapidly removed by frequent applications of the salts of soda.—*Medical News*, Jan 21.

TREATMENT OF BOILS.

Dr. Lowenberg finds incisions and boracic acid solution the most effective treatment of boils. Holding that they are produced by a microphytic parasite, he rejects the usual emollient treatment. He commences by incising them, after the application of ether spray, and then foments with a saturated aqueous or alcoholic solution of boracic acid. When the boils are recent, and the patients refuse the permission to incise them, he finds that simple fomentations with boracic acid solution arrest the development of the inflammatory process. It may be added that certain internal remedies possess a high degree of value in a succession of boils, notably the pyrophosphate of soda, and the hypophosphites. The relation of a succession of boils to a saccharine condition of the urine should not be overlooked. This is an unknown cause sometimes of their persistence in spite of all the usual remedies.—*Medical News*, Jan. 21.

TRANSACTIONS OF THE ULSTER MEDICAL SOCIETY.

SESSION 1881–82.

President—Professor Cuming, M.D.
Hon. Secretary—William Whitla, M.D.

Tuesday, January 31, 1882.

The President in the Chair.

On Whisky: what it is and what it does. By Robert Esler, M.D.

The word whisky is a derivation from the Irish *Usquebach*, the Gaelic *Uisage* being water, and *Featha* life. So that literally the word means water of life—*Aqua Vitæ*. Whisky of late years has become such an important article of manufacture, commerce, and export, so popular as a beverage, and so common as a medicine, that we hope a short paper on the article in its various phases will not be inappropriate to bring before a learned, a scientific, and a practical Society like the Ulster Medical.

Our first inquiry shall be—"What is whisky?" The definition given in the dictionary is that "it is a spirit obtained by distillation from barley, wheat, rye, maize, or oats." But we must inquire more minutely into the process by which it is obtained, and this brings before us the subject of distillation. There are two kinds of stills—"the pot still" and the "patent." The patent still produces what is known as *silent* spirit, so called from being *silent* as to its origin. You cannot tell from what it is obtained—it is simply alcohol and water without any flavouring matter to give it a distinctive character. This is all left behind, and the alcohol so made may come from grain, potatoes, molasses, or any vegetable matter which will ferment. The spirit so obtained does not undergo as much change with age as pot-still whisky, yet it does improve as you will readily perceive from the samples I am enabled to place before you through the kindness of our local distillers, and also some of our principal merchants. You can here compare whisky only a few days old with other samples of several years of age, and you can thus judge for yourselves of the improvement by age alone. And while referring to the samples on the table I may say that I have here some of the principal whiskies advertised in the London Market—Dunville's (both patent and old still), James Wilson & Son's Bann Whisky, Kinahan's LL.,

and John Jameson & Son's. These are all labelled and correctly marked as to strength. I have also placed in contrast with these some of the *stuff* bought at public-houses in different parts of the town; and the only comment I can make, after a very careful examination and comparison, is that there is whisky and *whisky*. Old still whisky is a spirit distilled from malt, barley, or oats, or a mixture of them, in a pot still, which brings over, together with the spirit, a variety of flavouring and other ingredients from the grain. Its distinctive character is due to the grain products, which are the sources of its flavour, and which, when sufficiently matured by keeping, undergo development into a number of volatile ethers. These ethers are the distinctive characters of good whisky—they are so subtle as to almost elude chemical analysis, but are easily discoverable by the nose and palate, and by their power to produce exhilaration. These ethers are altogether independent of the alcohol which holds them in solution. It is the presence of these ethers which distinguishes *old* whisky from *new*. New whisky, from whatever grain extracted, and even when manufactured with the greatest skill and care, contains a proportion of vegetable acids and a crude oil known as fusel oil, which renders it quite unfit for human consumption. The quantity and quality of these products depends largely on the quality of the grain used—*good* grain producing *good* whisky, just as *good* grapes produce *good* wine, and *good* hops *good* beer. New whisky and new wine are much alike in this—that both improve with age, and neither is fit for use when new. The principal change that silent spirit undergoes by keeping is to loose strength by evaporation; it has no vegetable acid or volatile oil to be acted upon—hence, in its new state, it is most valuable on account of its greater strength; but in the case of pot-still alcohol, which holds these subtle bodies to which we have referred in solution, while the alcohol also diminishes in strength, it acts upon these oils and acids and splits them up into that which gives old spirits value as a medicine, and even as a beverage. It is said that this capacity for improvement is infinite, and that the longer good whisky is kept the better will be its bouquet. When first distilled it is reduced to an uniform strength of twenty-five per cent. over proof before it is filled into casks, because at a greater strength it changes very slowly. And here we might compare its relative strength with that of other stimulants. I quote from Dr. Whitla's recent work on Therapeutics:—"Brandy, whisky, gin, and rum contain 50 to 54 per cent. of alcohol by measure; port wine, 16; sherry, 15; claret, porter, and ale, 5 to 6 per cent."

But the point I want to draw attention to is not so much the quantity of alcohol present as the quality of the stimulant, and the ethereal and exhilarating principle as it has been matured by age. And one has only to think of the wonderful subtility of the spirit, as seen in ether and chloroform, when alcohol is acted upon by other substances in the

laboratory of the chemist, or the powerful soporific effects of chloral hydrate, which is alcohol treated with chlorine, to understand something of the latent power which our national beverage possesses; and just as the acidity and harshness of unripe fruit are converted into sweetness and flavour during the natural process of ripening, so, I imagine, *it is* that age imparts mellowness and flavour to distilled grains, by the action of the alcohol on the crude material, which are very much like unripe fruit.

Whisky, in order to be *good*, must be made from *good* grain, distilled in a pot still, and then kept for a number of years in casks, and all this means expense, and the older the more expensive; hence it is, rather than wait for whisky to make itself by the natural process of change with age, the manufacture of whisky by the process known as "blending" has become so common. On this subject there is a mass of information given on the authority of certain Dublin distillers, of which the following are the assertions:—

Good whisky and bad are mixed together in order to make a compound acceptable to the taste of the consumer. This is the ostensible object, while really it is to produce a cheap and profitable article. It must be remembered that silent spirit has no distinctive character, is simply alcohol and water, and what serves to differentiate the other alcohols is their *source*. Spirit distilled from grape mash is brandy, and has a distinctive character of its own. Spirit distilled from a malt or grain mash is whisky, and has also distinctive characters. Spirit distilled from cane sugar is rum, and could not be mistaken for anything else. But brandy, whisky, and rum may be *manufactured* from silent spirit.

Irish whisky has of late years become a popular beverage with the English people, and has been much esteemed and recommended by medical men in that country, and this, no doubt, on account of its being really *whisky*, and from the excellence of the article produced by some of the best distillers; but I have been furnished with the particulars of blends which, I fear, would not add to the reputation of the national drink.

Thus, 3,500 gallons of new provincial whisky were diluted with 2,400 gallons of silent spirit, and to this were added 786 gallons, or thirteen per cent. real Dublin whisky as a finishing touch; and this "blend" was supposed to make the whole bulk good wholesome drink—perhaps it did.

So great is the demand for Irish whisky that a large proportion of our exports are said to have been first brought across the channel to be here blended, in order to be sent abroad with an Irish permit.

It is alleged that in one year upwards of 3,000,000 gallons of British spirits were so treated in Belfast alone.

The Dublin distillers say that genuine old still whisky does not require

blending, and that the only thing necessary to render it fit for use is to store it up in sherry casks, which gives it a certain colour and vinous flavour, which is much esteemed.

The Belfast merchants, on the other hand, maintain that it is improved by blending, that by a judicious mixture of alcohols you get both smoothness and flavour; and some of it is put twice into sherry casks for this purpose.

In these samples the prices range from 2s. 3d. to 6s. 6d. per gallon in bond; and I believe this difference is not greater than that of the effects produced by their use, which we will investigate presently. On analysis the patent is as good as the pot still, and the new as good as the old.

A practical question for the medical man or his patient will be—How and where to obtain really good whisky. Well, you must depend altogether on the dealer for quality; but by going to well-established merchants, and paying a fairly remunerative price, alcohol may be obtained which can be relied upon when prescribed to produce its characteristic therapeutic effects.

I think I have now said enough on the first part of this question, and in coming to deal with the second—*what whisky does*—I know I am approaching a very wide and difficult subject, and one on which opinions are very diversified.

It is a very curious fact that in nearly all the literature bearing on the action of alcohol, the evils, social and physical, are fully related and set down in the blackest colours imaginable, with scarcely a line or even a reference to its usefulness, or to the good results arising from it. And yet, in the face of all this, the nations of Europe, America, and the Colonies go on drinking it to an enormous extent, and in an increasing degree, disregarding all warnings, believing or acting as if they believed that the use of this thing does them good, and professing to feel the better for taking it.

It is easy to make out a list of charges against this active and popular agent. Our temperance friends charge it with such things as the following:—That it employs a capital in Britain alone of one hundred and seventeen millions of money; that the duties paid on it for a single year are more than thirty millions sterling; that it destroys thousands of lives; that by it multitudes are driven into workhouses, gaols, and lunatic asylums, besides being the direct maker of thousands of widows and tens of thousands of orphans.

Regarding its physical effects, one has only to look into Dr. Richardson's lectures on alcohol to stand aghast at the frightful havoc it makes on the human frame. A simple enumeration of the diseases attributed to it is as much as we can venture to quote at present—as, for instance, "alcoholic dyspepsia, nervous derangement, alcoholic insomnia, organic

deteriorations of the liver, kidneys, and lungs, alcoholic phthisis, alcoholic disease of the heart, cataract, calculi, nervous lesions, mental phenomena, loss of memory and speech, dipsomania, and transmitted disease." He says it is neither a food nor a drink suitable for man's natural demands, but that its application as an agent that shall enter the living organisation is properly limited by the learning and skill possessed by the physician.

This Society, on a former occasion, has fully discussed the social aspect of this question, when nearly every member took part in the debate, and the discussion is one of the most interesting in our Transactions.

On this occasion I wish, as briefly as I can, to refer to some of the physical and therapeutic effects resulting from the use of this agent, and first I would remind you of its vast importance in the laboratory. Out of 68 tinctures no less than 64 are prepared with spirits—40 with proof, and 24 with rectified spirit. There are also 16 so-called spirits, which are alcoholic solutions of a volatile oil. In the museum it is the agent in which specimens are preserved; and here we might refer to its great affinity for water—so greedy is strong alcohol for water that it extracts it from the muscle, tumour, or other tissue, while by its antiseptic quality it preserves the specimen from decay or change. The surgeon takes advantage of this quality, and by its rapid evaporating power inflammations and swellings are beneficially acted upon. *Spirit lotion*, which means generally whisky and water, is even now among us a somewhat popular remedy. Its uses outside the body are both numerous and well recognised, but *in* the economy of the human subject its action is not so clearly seen, nor so well understood, yet it produces physical changes and mental phenomena of a very definite character. Most persons who are in the habit of using alcohol are familiar with the different stages of change which it produces in the animal economy. Dr. Richardson very well describes the four stages thus:—"The first is a stage of excitement, when there exists a state of relaxation and injection of the blood-vessels of the minute circulation. The second is the stage of excitement with some muscular inability and deficient automatic control. The third is a stage of rambling, incoherent, emotional excitement, with loss of voluntary muscular power, and ending in helpless unconsciousness. The fourth and final stage is that in which the heart itself begins to fail, and in which death, in extreme instances of intoxication, closes the scene."

Alcohol enters the blood very readily when freely diluted with water, for which it has great affinity, and almost instantly produces its first characteristic effect of dilating the blood-vessels on the surface of the body by paralysing the nerves. This stage is a most useful one if we could stop at it; for by this means fever heat is reduced in consequence

of the increased quantity of blood exposed to radiation, and there results a marked diminution in the temperature of the body. But not only is the outer surface thus congested, the inner surface also is affected in like manner; and in this way a stimulus is given to a naturally weak or diseased organ to perform its function, for a time at least, under the influence of this spur. But the action does not stop here—it is progressive, and muscular inability quickly follows, unsteadiness of limb, with incoherence of speech, sopor, and anæsthesia, leading on to the stage of drunkenness.

The primary action of alcohol on the internal organs and the brain is, I think, under the skilful direction of the physician, an important one in medicine; unfortunately, however, a great number of persons do not stop at this stage, but push its use to a degree which becomes injurious; and one of the characteristic effects of its use is, that it creates a craving for itself. They soon get to the brink of a precipice, over which not a few are precipitated. It is this peculiarity and this danger which makes the prescribing of alcohol so dangerous, and which gives rise to so many charges being brought against medical men for sanctioning its use. Now I consider that we have just as much right and liberty to prescribe whisky as arsenic, and that the patient has no more liberty to continue the use of the one than of the other without the knowledge and sanction of his medical adviser; and that if he does so it is purely at his own risk, and for reasons other than its therapeutic effects.

I wish now to state a few of what are supposed to be the good results arising from the moderate and medicinal use of whisky, and I go on the supposition that the alcohol used is the best matured and purest spirit to be obtained; for, during the last fortnight, while I have been experimenting with the samples before you, I have become very fully convinced that while some of the best may be taken with comparative safety, it is not so with other kinds. Even smelling at some of these whiskies will produce an aching pain in the cerebellum of a very depressing and continuous kind.

Another observation I may make—that in no instance are we to suppose that we are dealing with persons in good health. The finding of this Society on the occasion of the debate referred to was:—

"1st. That alcoholic stimulants are unnecessary in health.

"2nd. That their influence on health is only exceptionally beneficial.

"3rd. That their influence on health is generally hurtful.

"4th. That in order to lessen the hurtful consequences attending the use of alcoholic stimulants the Society advises that, if used, they should be in extreme moderation, only with food, not before dinner, and not habitually."

But all this leaves the question of their use in disease untouched. And

first I would say, that in some cases of weak digestive powers the addition of an ounce of whisky at the mid-day meal seems to act with good results.

In phthisis I do not know any medicine so relished by the patient, as affording almost immediate relief to the breathing in the first instance, and where prescribed with milk as food it certainly does seem to arrest wasting, and often assists in restoring comparatively robust health; and its use in this form also applies in most wasting diseases, especially those depending on a tubercular condition in children. In many of the various forms of disease of the heart, especially in the old, the use of alcohol is undoubtedly beneficial. In fevers, and at particular stages in the treatment of the disease, the beneficial effect of alcohol is recognised by most medical men. When dealing with the storm of delirium or the collapse of exhaustion it can be administered so as to act on the one hand as a sedative and on the other as a stimulant, serving as the steam does to the ship, battling with the head-wind of the tempest or propelling through the calm of the tropics, to carry her on only a little way where the trade-winds of a healthy breeze will leave her free to dispense with the auxiliary help. It is in these critical times that one has recourse to such an active agent without any questionings as to either its propriety or its expediency.

One of the common results of alcohol drinking is headache; but this is attributed generally to the impurities it contains, and I am inclined to believe they account for it to a large extent. The most characteristic effect of a moderate dose of alcohol, to me, is that it acts as a sedative to the brain and nervous system, and this effect is most marked on those who are not in the habit of using it constantly. Its stimulating effect on some persons is very evanescent, its sedative effect very prolonged. To such persons there is no *work* to be got out of alcohol—muscular debility and weariness soon sets in; if walking, they are unable to proceed on their journey, and if engaged in mental work, stupor and *ennui* supervene, their sensibilities are blunted, and a condition of easy lassitude results.

I must now close this study, and I do so with a consciousness of the very imperfect way I have brought it before you, and under a deep impression that the investigation of this subject, from the very nature of it and from the many prejudices and preconceived notions about it, is beset with many difficulties, and the difficulties multiply as we approach a practical conclusion; yet I would venture to submit a few of what I think are plain facts derived from the considerations which have been before us:—

1st. That the value of a stimulant depends mainly on the quantity of alcohol it contains.

2nd. That where alcohol is prescribed whisky is perhaps the safest form in which to use it.

3rd. That the quality of the spirit is an item of importance as regarding its action, old being preferable to new.

4th. That in using whisky it should be freely diluted with water.

5th. That the habitual use of spirits is injurious to the animal economy.

6th. That it is a valuable agent in the hands of the medical profession in certain conditions of disease.

7th. That its use should not be continued after the results contemplated are attained any more than that of any other powerful and dangerous medicine.

TREATMENT OF SPERMATORRHŒA.

Dr. Nowatschek reports in *Schmidt's Jahrbucher*, January, 1881, a case of spermatorrhœa consequent on typhoid fever, the diagnosis resting on the presence of spermatozoa in the fluid which was constantly oozing from the urethra. Iron, quinine, and cold applications to the genitals were tried in succession with some success, but a cure was not accomplished. Lupulin, camphor, and bromide of potassium were without effect. Atropia was then employed, and the patient was completely cured in five days. The author cites a second case where he was equally successful with the hypodermic injection in the perineum of a one per cent. solution of atropia.—*Jour. de Méd. de Paris*, Oct. 8, 1881, and *Medical Progress*, Jan. 7.

CONJUGATE DEVIATION OF THE EYES IN DISEASES OF THE BRAIN.

Leichtenstern (*Dtsch. med. Woch.*, Oct. 29, 1881) lays down the following formulæ:—1. If a hemiplegic patient shows conjugate deviation of the eyes to the opposite side, this points with great probability to a focus of disease in the cerebral hemisphere on the opposite side from the hemiplegia. 2. If a patient with hemiplegia and hemiplegic irritative symptoms (unilateral convulsions, semi-lateral epilepsy) shows conjugate deviation of the eyes towards the side of the paralysed and convulsed limbs, this points with great probability to a focus of disease in the cerebral hemisphere on the opposite side to the hemiplegia. 3. If a patient with hemiplegia (without convulsions) shows conjugate deviation of the eyes toward the paralysed side, this points with great probability to a focus of disease in the half of the pons opposite to the hemiplegic side. 4. If a patient with hemiplegia and convulsions of the paralysed limbs (hemiplegic epilepsy) shows a conjugate deviation of the eyes toward the side opposite to the hemiplegia, this points with great probability to a focus in the half of the pons opposite to the hemiplegia.—*N. Y. Med. Jour. and Obst. Rev.*, Jan.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, M.D., F.K.Q.C.P.

Vital Statistics

Of the Eight Largest Towns in Ireland, for Four Weeks ending Saturday, January 28, 1882.

Towns	Population in 1881 (Unrevised)	Births Registered	Deaths Registered			Deaths from Zymotic Diseases							Deaths from Phthisis	Annual Rate of Mortality per 1,000 Inhabitants
			Total Number	Under 1 year	At 60 years and upwards	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhœa		
Dublin, -	348,525	782	940	192	191	–	156	5	1	3	19	10	88	35·0
Belfast, -	207,671	522	437	79	82	22	–	4	2	2	7	10	61	27·3
Cork, -	78,361	133	162	26	45	–	3	2	1	8	8	2	7	26·9
Limerick, -	38,600	107	109	12	27	–	–	12	–	–	1	2	12	36·7
Derry, -	28,947	74	64	14	15	–	–	–	–	1	2	–	4	28·7
Waterford,	22,401	40	34	8	8	3	1	–	–	–	2	–	5	19·7
Newry, -	14,782	32	36	2	11	–	–	6	–	–	–	1	3	31·7
Galway, -	14,621	23	20	6	8	–	–	–	–	–	–	–	–	17·8

Remarks.

In his "Weekly Return of Births and Deaths" for the week ending Saturday, January 7, 1882, the Registrar-General for Ireland (Dr. T. W. Grimshaw) observes that, in accordance with advances which have taken place in medical science and nomenclature, it has become necessary slightly to modify the classification hitherto in use for statistical purposes. This modification will not materially alter the relation of the various groups of diseases to one another, and for all practical purposes the numbers tabulated under the new system are fairly comparable with those included under similar denominations in the classification of Dr. Farr, hitherto made use of in the returns published by the General Register Office. The "Causes of Death" are now arranged under eight classes, viz.:—(I.) Zymotic Diseases; (II.) Parasitic Diseases; (III.) Dietic Diseases; (IV.) Constitutional Diseases; (V.) Developmental Diseases; (VI.) Local Diseases; (VII.) Deaths from Violence; (VIII.) Deaths from ill-defined and unspecified Causes.

In the four weeks ending Saturday, January 28, the death-rate was extremely high in Limerick and Dublin; very high in Newry and Londonderry; high in Belfast and Cork; and low in Waterford and Galway. In twenty-eight of the largest English towns, in all of which the enumerated population in April last exceeded 70,000 persons, the deaths registered during the four weeks give a rate of 24·0 per 1,000 of the population annually. The death-rate was 30·2 per 1,000 per annum in the sixteen principal town districts of Ireland, 24·5 in London, 19·2 in Edinburgh, and 25·3 in Glasgow. When the deaths of persons admitted into public institutions from places outside the registration district are deducted, the death-rate becomes 34·6 per 1,000 in the Dublin registration district, and as high as 39·8 per 1,000 within the municipal boundary of Dublin. The registered deaths were 940, or 26 more than were recorded in the preceding four weeks. Of the total deaths, 192, or 20·4 per cent.—that is, one in every five—were of *children under one year of age*. Zymotic diseases proved fatal in 205 instances, compared with an average of 171·1 deaths in the corresponding period of the previous ten years, and with 160 deaths in the preceding four weeks. Measles slew 156 persons, of whom 141 were children under five years old, including 44 infants under one year. Only 20 out of the 156 deaths from measles occurred in all the Dublin hospitals. In connexion with the epidemic of measles, a high mortality from diseases of the respiratory organs is to be noticed in a season remarkable for its fineness and almost complete absence of frost and snow. The deaths from respiratory diseases were 251, compared with a ten-years' average of 245·3, and included 184 from bronchitis (average = 183·3) and 42 from pneumonia (average = 29·6). Of the 19 deaths from fever, 7 were referred to typhus, 9 to typhoid or enteric, and 3 to continued fever of ill-defined type. Smallpox caused 22 deaths in Belfast, against 12 in the previous four weeks, and 3 in Waterford. Scarlet fever was prevalent and fatal in Newry and Limerick. Whooping-cough caused 8 deaths in Cork. A sporadic case of variola discreta occurred in the Rathmines district, Dublin; but the patient happily recovered, and the disease did not spread.

Phthisis was fatal in Belfast (61 deaths) and in Dublin (88 deaths).

On Saturday, January 28, the following returns of cases of the chief epidemic diseases under treatment were sent in from the principal Dublin hospitals—smallpox, 0; measles, 62; scarlet fever, 14; typhus, 39; typhoid, 9; pneumonia, 14.

The mean temperature of the four weeks was 44·1° in Dublin, 39·6° at Greenwich, and 42·5° in Edinburgh.

Meteorology.

Abstract of Observations made at Dublin, Lat. 53° 20′ N., Long. 6° 15′ W. for the Month of January, 1882.

Mean Height of Barometer,	30·247 inches.
Maximal Height of Barometer (on 18th at 10 30 p.m.),	30·935 „
Minimal Height of Barometer (on 2nd at 11 p.m.),	29·052 „
Mean Dry-bulb Temperature,	44·1°.
Mean Wet-bulb Temperature,	42·0°.
Mean Dew-point Temperature,	39·6°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·243 inch.
Mean Humidity,	84·9 per cent.
Highest Temperature in Shade (on 14th),	56·5°.
Lowest Temperature in Shade (on 1st),	34·1°.
Lowest Temperature on Grass (Radiation) (on 18th),	30·6°.
Mean Amount of Cloud,	63·4 per cent
Rainfall (on 17 days),	1·476 inches.
Greatest Daily Rainfall (on 2nd),	·382 inch.
General Directions of Wind,	S.W., W.S.W., S.

ST MARY'S HOS... RADFOR... LIBRAR... MANCHES...

Remarks.

So fine and mild a January has not been experienced for many years. Temperature was particularly high in Ireland, Scotland, and Norway, in which countries the wind was chiefly south-westerly throughout the month. In England the air was often calm, so that fog and cold prevailed, and this was to a still greater extent the case in France, where the month was cold with a singular absence of rain. But the most remarkable feature in the weather of January was the extraordinary height of the barometer on the 18th, when the isobar of 30·9 inches embraced the greater part of France, the S. and E. of England, Wales, and the S. of Ireland. Until the 10th the weather was very changeable—strong squally winds from S.W. to W., sudden and considerable variations in temperature, and frequent showers being its leading features. Early on the morning of the 1st a fall of sleet and snow occurred in the counties of Kildare and Dublin. At 8 a.m. of the 6th the barometer was down to 28·40 inches in the Hebrides. On the 10th an anticyclone was formed over France and the Continent generally, and this threw a warm southerly current upon the Irish and to a less extent upon the British coasts. This area of high pressure continued to develop until the 18th, when the barometer reached the extraordinary height of 30·97 inches at Oxford—the highest reading at Dublin being 30·935 inches. In this city the mean height of the barometer for the week ending Saturday, the 21st, was no less than 30·755 inches, or fully an inch above the average atmospherical pressure for January. Dense fogs prevailed in the calm central region of this marvellous anticyclone, and

of course temperature gave way considerably for the time being. On the night of the 19th bright aurora was seen all over the N.W. of Europe. The contrast between the temperature at Lyons (46° N. lat.) and Bodö in Norway (67° N. lat.) is one of the wonders of the present very exceptional season. The 8 a.m. readings of the thermometer each day of the week ending the 21st were at Lyons 28°, 29°, 27°, 25°, 25°, 23°, and 23° respectively; those at Bodö were 47°, 42°, 45°, 38°, 42°, 42°, and 41° respectively. At 8 a.m. of the 27th the thermometer read 22° at Lyons, but 44° at Bodö, twenty-one degrees further north and within the Arctic circle. On the night of this day a bourrasque passed towards N.E. across Ireland, causing a sudden S.W. gale and a transitory rise of temperature to 54·2° in Dublin—a few hours later there was a downpour of rain and sleet, and when morning broke the loftier summits of the Dublin mountains were snow-capped. On the 29th a depression passed eastwards to the southward of Ireland, and in consequence an easterly wind—the first observed since last October—prevailed. A solar halo was seen on the 4th; lunar halos were visible on the 1st, 7th, and 28th. Sleet fell on the 1st and 28th; hail on the 2nd and 29th. The atmosphere was foggy on the 16th, 17th, and 18th. In Dublin there was a complete absence of frost, and the mean temperature was as much as 12° above that of January, 1881.

PERISCOPE.

Edited by G. F. Duffey, M.D., F.K.Q.C.P.

EXTIRPATION OF THE LACHRYMAL SAC.

In an article on this subject (*Arch. f. Ophthal.*, XXVII., 2, 1881) Schreiber gives the following indications for the performance of the operation:—1. In very obstinate purulent dacryocystitis with stenosis of the nasal duct, which admits of being probed, but has existed so long that a slight bulging of the region of the lachrymal sac has been produced with thickening of its walls. 2. In fistula of the lachrymal sac, especially in cases in which frequently recurring attacks of inflammation have caused cicatricial adhesion of the skin with the wall of the sac, and induration. 3. In tedious catarrh of the lachrymal sac with complete patency of the nasal duct. The steps of the operation are as follows:—An incision, two millimetres long, and four millimetres from the inner canthus, is to be made vertically, with its upper end inclined slightly forward, only through the skin, so as to avoid wounding the sac wall. The edges of this incision are to be carefully dissected up, and the anterior wall of the sac laid bare. The edges of the wound are then to be held apart with

forceps or hooks, and the sac is to be seized with forceps and carefully dissected up from its attachments, keeping close to the lachrymal bone, either with scalpel or blunt-pointed scissors. If free bleeding follows, this must be arrested before the operation can be continued. After the sac has been removed, the cavity left is to be carefully scraped with a Volkmann's sharp spoon, and the mucous membrane of the nasal duct scraped out and destroyed as far as possible with a smaller spoon of the same kind. The wound is then to be washed out with a two per cent. solution of carbolic acid, and the cavity is then to be closed accurately with sutures.—*N. Y. Med. Jour. and Obst. Rev.*, Jan., 1882.

THE PRECANCEROUS STAGE OF CANCER, AND THE IMPORTANCE OF EARLY OPERATIONS.

In a clinical lecture on this subject (*Brit. Med. Jour.*, January 7th), Mr. Jonathan Hutchinson observes:—The patient who has just left the theatre is the subject of cancer of the tongue in an advanced stage. As I demonstrated to you, the lymphatic glands are already enlarged. It is hopeless to think of an operation, and there is nothing before him but death, preceded and produced by a few months of great and continuous suffering. His case, I am sorry to say, is but an example of what is very common. Not a month passes but a case of cancer of the tongue presents itself in this condition. The cases which come whilst the disease is still restricted to the tongue itself are comparatively few; nor does this remark apply only to the tongue. "Too late! Too late!" is the sentence written but too legibly on three-fourths of the cases of external cancer concerning which the operating surgeon is consulted. It is a most lamentable pity that it should be so; and the bitterest reflection of all is, that usually a considerable part of the precious time which has been wasted has been passed under professional observation and illusory treatment. In the present instance, the poor fellow has been three months in a large hospital, and a month under private care. I feel free, gentlemen, to speak openly on this matter, because my conscience is clear that I have never failed when opportunity offered, both here and elsewhere, to enforce the doctrine of the local origin of most forms of external or surgical cancer, and the paramount importance of early operation. I have tried every form of phraseology that I could devise as likely to impress this lesson. Nearly twenty years ago, I spoke to your predecessors in this theatre concerning the "successful cultivation of cancer;" telling them how, if they wished their patients to die miserably of this disease, they could easily bring it about. The suggestion was, that all suspicious sores should be considered to be syphilitic, and treated internally by iodide of potassium, and locally by caustics, until the diagnosis became clear. More recently, I have often explained and enforced the doctrine of a precancerous

stage of cancer, in the hope that, by its aid, a better comprehension of the importance of adequate and early treatment might be obtained. According to this doctrine, in most cases of cancer of the penis, lip, tongue, skin, &c., there is a stage—often a long one—during which a condition of chronic inflammation only is present, and upon this the cancerous process becomes engrafted. I feel quite sure that the fact is so. Phimosis and the consequent balanitis lead to cancer of the penis; the soot-wart becomes cancer of the scrotum; the pipe-sore passes into cancer of the lip; and the syphilitic leucoma of the tongue, which has existed in a quiet state for years, at length, in more advanced life, takes on cancerous growth. The frequency with which old syphilitic sores become cancerous is very remarkable; on the tongue, in particular, cancer is almost always preceded by syphilis, and hence one of the commonest causes of error in diagnosis and procrastination in treatment. The surgeon diagnoses syphilis, the patient admits the charge, and iodide of potassium seems to do good; and thus months are allowed to slip by in a state of fools' paradise. The diagnosis, which was right at first, becomes in the end a fatal blunder, for the disease which was its subject has changed its nature. I repeat that it is not possible to exaggerate the clinical and social importance of this doctrine. A general acceptance of the belief that cancer usually has a precancerous stage, and that this stage is the one in which operations ought to be performed, would save hundreds of lives every year. It would lead to the excision of all portions of epithelial or epidermic structure which have passed into a suspicious condition. Instead of looking on whilst the fire smouldered, and waiting till it blazed up, we should stamp it out on the first suspicion. What is the man the worse if you have cut away a warty sore on his lip, and, when you come to put sections under the microscope, you find no nested cells? If you have removed a painful hard-based ulcer of the tongue, and with it perhaps an eighth part of the organ; and, when all is done, and the sore healed, a zealous pathological friend demonstrates to you that the ulcer is not cancerous, need your conscience be troubled? You have operated in the precancerous stage, and you have probably effected a permanent cure of what would soon have become an incurable disease. I do not wish to offer any apology for carelessness, but I have not in this matter any fear of it.—*Lond. Med. Record*, Feb. 15, 1882.

THE TYPHOID BACILLUS.

In the *London Medical Record*, February 15, 1882, Dr. Robert Saundby abstracts two highly important papers on the presence of bacilli in typhoid fever. Eberth (Virchow's *Archiv.*, Band LXXXIII., p. 486) gives the results of the examination of seventeen cases of typhoid fever, with reference to the presence of bacilli. He compares these with eleven other cases of different infectious diseases, in which micrococci were

found only exceptionally in the lymphatic glands, and no bacilli were present, and with thirteen cases of tuberculosis and phthisis, in which, in spite of the presence of extensive intestinal ulcers, no micro-organisms were found in the spleen or lymphatic glands. The ulceration of the intestine, here, as in typhoid fever, did not favour the entrance of micro-organisms. In six of the cases of typhoid, he found bacilli, generally in the glands, less often in the spleen; in eleven cases he found nothing. The average duration of the disease in the positive cases was rather longer than in any previous observations. The number of bacilli was, on the whole, less; only in one early case (of fourteen days' duration) was it very large. The bacilli agreed in all respects with the earlier descriptions, but were not so abundant as in Klebs' cases. In addition, there were, besides the ordinary form, some long broad threads, perhaps only another phase of development. Letzerich (*Arch. für exp. Path.*, Band XIV., Heft 3), having observed that the hypostatic sputa of typhoid patients contained the typhoid bacillus in great quantity, cultivated it with care in isinglass jelly. He found that rabbits, infected with this material by hypodermic injection, sickened and died in about seven days. Dissection showed injection and swelling of the mucous membrane of the small intestine and Peyer's patches; the spleen was enlarged. In another earlier series of experiments, in which the washed micro-organisms from typhoid stools were employed, he found atrophy of the spleen. He explains, by the longer duration of those cases, atrophy succeeding to the primary state of enlargement; and he refers to the case of a rabbit placed by his children in the hutch he had used for these experiments, and which sickened and died in seven or eight weeks; on section, it showed atrophy of the spleen and numerous atrophic patches in the intestinal mucous membrane, with no Peyer's patches, but in their place, thin transparent areas surrounded by a slightly thickened and pigmented edge. These experiments show that the typhoid poison may be introduced by other ways than the alimentary canal, and that the bacilli have the power of entering the blood-vessels and being transported with the blood-current. They leave the blood again, and pass into the tissues, either directly by diapedesis, or enter white corpuscles, which act as their carriers through the walls. Microscopical examination of the tissues of these animals showed the tissues, especially Peyer's patches, infiltrated with fungoid growth in zoöglœa-masses of a pale yellow colour, probably derived from the colouring matter of the blood. Some of the spore-cells give rise to bacilli by endogenous division, which form networks for the most part, but some become enlarged at each end, so as to assume a dumb-bell form. This infiltration leads to necrosis of the tissues. In the spleen similar micrococci and bacilli, forming colonies, are found in the interstitial spaces, under the capsule, and between the elements

of the organ. The small veins are often blocked by the growth, causing capillary hæmorrhages. In the lungs there are inflammatory foci formed by the accumulation of lymphoid cells in the alveoli, between which are micrococci and spore-cells. The veins are often obstructed by fungoid growth. In a postscript he adds that, after seeing Klebs' description of a fine thread-like form of the micro-organism, he looked over his preparations carefully, and found it present in those follicles in which the process had not reached a high degree. These researches fully identify his earlier-described "micrococcus typhi abdominalis," with the "bacillus typhosus" of Klebs.

ABORTIVE TREATMENT OF FELON WITH COPAL VARNISH.

From the observation of a case of deep-seated felon successfully treated empirically by the application of copal varnish, and judging from the favourable results of a similar treatment by himself in seven cases of whitlow, Dr. Isham, of Cincinnati, in a well-reasoned out article in the *Medical News* of Philadelphia for Jan. 28th, recommends this plan of treatment in felon and other local acute inflammations of external parts previous to the formation of pus. He says there are three ways conceivable whereby copal varnish may promote resolution of local inflammation:—1. By an irritant action resulting from the turpentine which constitutes three-fourths of the varnish. 2. By withdrawing oxygen and arresting oxidation, the result of the well-known attraction turpentine manifests for oxygen. 3. By excluding air and by pressure. No directions are given as to the mode of application, but apparently it is applied by wrapping flannel bandages saturated in the varnish over the part and a dry flannel envelope externally. If the varnish upon the dressing becomes unpleasantly hard by drying, it may be softened by adding fresh material from time to time. Its removal may easily be accomplished by rubbing in lard, and then washing with soap and water.

HAIR TONIC.

Prof. John Goodman suggests the following prescription for use in cases in which the hair falls out. It has been used successfully for baldness after protracted fevers, &c.:—℞. Zinc sulphate, 10 grains; quinine, 20 grains; tincture of cantharides, 1 ounce; bay rum, 2 ounces; glycerin, 2 ounces; water, 2 ounces. To be brushed or rubbed into the scalp, with much gentle shampooing.—*Medical Brief.*

ADMINISTRATION OF ERGOT.

Dr. Evetsky states that beef-tea disguises the taste of the liquid extract of ergot almost entirely.—*N. Y. Med. Jour. and Obst. Rev.*, Jan., 1882.

Lithographed by John Falconer Dr

From a Photograph

ST MARY'S HOSPITAL
RADFORD
LIBRARY
MANCHESTER

MR. STOKES ON AMPUTATION AT THE HIP-JOINT.

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

APRIL 1, 1882.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XII.—*On Amputation at the Hip-joint.* By WILLIAM STOKES, President of the Pathological Society of Ireland; Professor of Surgery, Royal College of Surgeons; Surgeon to Richmond Surgical Hospital; Fellow of the Royal Medico-Chirurgical Society of London; Member of the Royal Irish Academy; Visitor of Examinations appointed by the General Medical Council of Education and Registration; &c., &c.

I DEEM the following case worthy of record, as it illustrates not only the efficacy of Davy's lever in checking hæmorrhage during amputation at the hip-joint, but also the value of eucalyptol as an antiseptic both during, and subsequent to, the performance of the operation.

CASE.—P. H., aged twenty-four, by occupation a tobacco-spinner, was admitted into the Richmond Surgical Hospital under my care, on the 23rd November, 1881, on account of a large, somewhat globular, fluctuating, semi-elastic tumour, occupying the external and posterior aspect of the left thigh. On the most prominent portion of the tumour the integument had ulcerated, and through the opening, a large fungoid, frequently-bleeding mass, protruded. The integument over the tumour which had not ulcerated was glazed, and covered by large venous anastomoses. The ulceration had occurred on the 18th November, and since that date there had been frequent hæmorrhages, which not unnaturally much alarmed the patient, and reduced him to a weak, debilitated condition.

Four years previously the patient had been under my care on account of a small, soft, fluctuating tumour of the thigh, occupying the same situation as the large one, on account of which he now sought relief. The primary tumour, which was of the size and somewhat of the shape of a Tangierine orange, the patient stated had appeared immediately, or at all events very shortly, after the receipt of a blow. It had, in fact, a distinctly traumatic origin. At first I looked on it as nothing of a more serious character than a hæmorrhagic effusion, and accordingly kept him in bed for a few days, applying cold applications. The tumour not disappearing, I laid it open, and evacuated a large clot of blood. The cavity was washed out with a solution of chloride of zinc, and a drainage-tube inserted. The wound healed perfectly and without suppuration, and the patient shortly after left the hospital quite free from inconvenience. For two years subsequently he stated that he remained perfectly well. At the end of that time, he perceived an enlargement precisely in the same situation where the original injury had been received. For this tumour, as I was informed after the amputation, he had consulted a surgeon of another hospital, who removed it. Subsequently the tumour again recurred, and was allowed to reach the large dimensions it had on his admission into the Richmond Hospital, for the second time, last November.

In some parts of the tumour there was evidence of fluid, but it was mainly composed apparently of nodulated masses of firm tissue. There was no distinct limitation of the tumour—the base of it sloped, and, as it were, shaded off into the surrounding tissues of the thigh. I could not say decidedly if there was any connexion with the periosteum or bone; but, judging from the freedom with which the tumour could be moved, the probabilities were, I considered, that it was not connected with either. There was some slight glandular enlargement both above and below Poupart's ligament.

It was clear I had to deal in this case with a form of what Mr. Barwell has recently so well named as "acute traumatic malignancy," and that the best course for the patient would be to remove the limb at the hip-joint—a view in which my colleagues concurred.

Being particularly anxious that the case should, if possible, during the union of the wound have an aseptic course, I took the precaution of giving the patient the day previous to the operation a carbolic acid bath. On the morning of the operation, the patient, after having had his bowels cleared out by an enema, was put into a second antiseptic bath—the water being on this occasion impregnated with eucalyptol. At 10 30 a.m. on the 28th November the amputation was performed, in which I was assisted by my colleagues, Drs. Thomson, Stoker, and Corley. I was also favoured by the presence of many other surgeons, among whom I may mention Mr. Porter, Mr. Croly, Professor Bennett, Mr. Myers, Surgeon to the Coldstream Guards, &c.

As Mr. Davy's lever had acted so admirably in the amputation at the hip-joint which I performed in 1879, in which the operation was almost bloodless, I determined to employ it again. Mr. Thomson kindly undertook the manipulation of it, as he had done in the previous case. The success attending the use of the lever was very great, but not so signal as in the first one already alluded to. However, very little blood was lost, and should I be called on to perform the operation again, I will certainly continue the use of the lever. The operation, by the antero-posterior flap method, was rapidly performed—lasting, as I was subsequently informed, forty-five seconds. The femoral artery was secured by a carbolised silk ligature—all other arteries and many of the larger veins by carbolised catgut. A solution of chloride of zinc (40 gr.—℥ i. aq.) was freely applied to the flaps, and subsequently treated in the same way with ol. eucalyptol. A drainage tube was then inserted, and the edges of the wound brought together with numerous points of carbolised catgut sutures. Immediately preceding the operation the patient got ʒ vi. of brandy, and after the operation, on being put to bed, he was given ʒi. of brandy in hot water. For the following details of the progress of the case I am indebted to my able clinical assistant, Mr. Cassidi, whose attention and care were unremitting, and worthy of full recognition.

First day, 1 p.m.—Pulse imperceptible; lips blanched; given brandy ʒ iv., with ♏ v. of tr. opii; complains of pain in the flank. 1 40 p.m.—Pulse 132; very weak; temp. 98·3° F. 3 50 p.m.—Pulse a little better, 125. 7 45 p.m.—Pulse not so good; some oozing through the dressings. 9 30 p.m.—Seen by Mr. Stokes; pulse much better; catheter passed; given hypodermic injection of morphia. 11 p.m.—Sleeping. 1 a.m.—Sleeping still.

Second day.—Had a good night; got a great deal of sleep; awoke in good spirits; complains of hiccough and nausea; temp. normal; catheter no longer required; ordered milk, soda-water, and ice. 2 30 p.m.—All going well. 6 p.m.—Pulse stronger than it has been yet since the operation. 8 30 p.m.—Pulse keeps good; temp. 98·5°; has just been asleep for 30 minutes.

Third day.—Had a bad night; sick and restless; did not sleep more than a few minutes during the whole night; pulse 108; temp. 98·6°; his abdomen is very tympanitic; he is drowsy; not so fresh as yesterday morning. 11 a.m.—Changed his sheets and linen; there had been a good deal of bloody serous discharge through the dressings, but Mr. Stokes thinks it better not to change them until the next day; turpentine stupes ordered for the abdomen. 12 30.—Feels much better since the change and since the stupes have been put on.

Fourth day.—Had a good night; slept well; pulse much better; Mr. Stokes changed the dressings under eucalyptol spray; the wound looks very well; a great portion united by first intention—in truth all, save at

the places of entrance and exit of the drainage-tube. 6 p.m.—Complains of pain in the hip; pulse very good. 1 a.m.—Asleep.

Fifth day.—Slept well; pulse 105; temp. 100·2°. 11 a.m.—Patient was moved into another bed; bore the change well.

Sixth day.—Wound dressed; perfectly aseptic.

Eighth day.—Got tr. opii ♏ x., his bowels having been moved twice during previous day; slept well.

Tenth day.—Wound dressed; a slight trace of suppuration at one side of the wound; a small abrasion of skin over nates.

Fourteenth day—Wound dressed to-day; drainage-tube taken out; wound quite healthy.

On the 9th January the wound was all but completely closed; on the 25th it was so; and on February 1st the patient returned home perfectly well.

The accompanying lithograph, taken from a photograph by Messrs. Chancellor of Dublin, gives a faithful representation of the result obtained in this case. If any fault in it is to be found, it is that the cicatrix is more distinctly indicated in the illustration than it is in the patient.

As regards the pathology of the tumour I may mention, that on making a section of it its consistency was found to vary much, some portions of it being dense and hard, while others were soft and brain-like; again, parts of it were anæmic, while others were very vascular. In the centre was a large cyst filled with blood, an incision through it showing a regular apoplectic deposit or clot of blood. A deeper incision showed that the tumour was not connected with the bone or periosteum, there being a distinct layer of muscular tissue between the bone and the tumour; also it was not encapsuled, the disease appearing to ramify through the muscular tissue in every direction. There being no distinct capsule, any enucleation of the tumour would have been impossible. This I was pretty confident of before the operation, in consequence of observing an enlargement over the anterior aspect of the thigh, which I believed to be due to infiltration. The histological characters of the tumour were determined for me by Dr. Abraham, the distinguished Curator of the Museum of the Royal College of Surgeons, and the result of his investigation determined the fact of its being a well-marked example of a round-celled sarcoma.

Amputation at the hip-joint is an operation which, under any circumstances, and no matter what precautions may be adopted to avoid the traumatic accidents liable to occur from the necessarily

great size of the wound, must be regarded as one of the most serious in the whole range of practical surgery. The conditions that indicate the operation, the shock, and hæmorrhage, all contribute to make the prognosis in such cases one of the utmost gravity. In the *British Medical Journal* (April 27, 1878) an account is given of an interesting communication which M. Verneuil contributed on this subject to the Academy of Medicine in 1877. "Death," he observed, "is sometimes immediate, on the operating table itself; sometimes rapid in the first five hours, sometimes approximate within two hours; at other times it occurs after the first seven days, or later. Early deaths are by much the most frequent, ordinarily caused by the hæmorrhage which precedes, accompanies, or follows the operation, and which proceeds not only from the femoral artery but also from the branches of the gluteal and the sciatic arteries. Later deaths are most frequently the result of blood-poisoning." The four main factors, therefore, which have hitherto played so important a part in raising the mortality of this operation are:—

I. The serious conditions which necessitate the operation.
II. Shock.
III. Blood-poisoning.
IV. Hæmorrhage.

The first of these the surgeon has obviously no control over, with the second he is almost equally powerless, although there is the high authority of Von Langenbeck for maintaining that hæmorrhage intensifies it; but with septicæmia and hæmorrhage he is in most instances—thanks to recent advances in surgery—able to grapple, and with good prospect of success.

As regards the third factor, the complete absence of surgical fever in the cases that came under my observation, in all of which rigid Listerian antiseptic precautions were adopted—previous, during, and subsequent to the operation—is evidence of the powerful means that are now at our disposal for striking at those septic influences which have hitherto proved so fatal in such a large number of cases of amputation at the hip-joint.

In the first case, that of B. P., operated on by me in October, 1879, and already alluded to, for eight days after the operation (the most critical period during the convalescence of the patient) the wound remained perfectly aseptic notwithstanding the pre-existence of sinuses in the flaps, and the amount of pus production subsequently observed was hardly perceptible during the healing

of the wound, which eventually was perfect and complete.[a] In the case now more particularly under consideration, the progress towards recovery was uninterrupted. Its course was, in truth, practically aseptic. On one occasion only was any trace of suppuration observed, and I believe this to have been due to my having perhaps left the drainage tube somewhat longer than necessary in the wound. Although I am of opinion that if any particular kind of case, or group of cases, should be considered as a touchstone by which to test the merits of antiseptic practice, it is resection of the knee-joint, yet to get union with practically no pus production, after an operation of such magnitude as amputation at the hip-joint, is a fact which must tend to strengthen and confirm the belief in the efficacy of antisepticism in diminishing the chances of septicæmia, not so much by any of the so-called "modified" antiseptic systems, as by a rigid adoption of Lister's practice in all its minutest details.

It seems strange that even so recently as 1877 a surgeon of such deserved eminence as M. Verneuil should be found advocating an abandonment of efforts to obtain primary union after amputation at the hip-joint. His reason for holding that opinion was, that he considered primary union, by promoting a retention of fluids likely to stagnate and decompose in the wound, acts as an essential factor in inducing septicæmia. In reading this opinion one would imagine that such things as drainage and antiseptic surgery were unheard of four years ago! To avoid the accumulation and retention of septic fluids, M. Verneuil recommends a large, open, exposed wound in preference to any of the oval, lateral, or antero-posterior flap operations. His procedure is termed the "racquet" method, of which the following is an account:—"In the first stage an incision is made in the skin, a vertical incision, from 2 to 2·4 inches, starting a finger's breadth from below the crural arch, and from the inferior extremity of this is made an incision which crosses obliquely the external surface of the trochanter, and is continued along the gluteal fold. The second stage consists of opening the sheath of the vessels, preventive ligature of the femoral artery above its bifurcation, and ligature of its two branches *en masse* to prevent the reflex hæmorrhage by anastomosis, and

[a] This patient died about six months after the operation of an attack of apoplexy. Shortly before this two old sinuses (connected apparently with disease of the sacrum) re-opened; from these there was a purulent discharge. They had no connexion with the wound. The apoplectic seizure proved fatal in two days.

section of the veins between the ligatures. The third stage consists of section with the bistoury of the muscles of the anterior region. The vessels compressed in the muscular interstices are only divided after previous ligature. In the fourth stage the joint is laid open. The fifth stage consists of division of the posterior muscles and of the vessels with the same precautions. The operation may be terminated in half an hour. The wound is open and shaped like a hollow cone." [a]

I need hardly say that making the operation so very protracted a one, must add largely to its peril; but, in truth, it is unnecessary to criticise a procedure which no surgeon having drainage tubes, efficient antiseptic appliances, and Davy's lever, at his disposal, would at the present time be likely seriously to contemplate performing; and were it not that the proposal had such distinguished credentials, I should not on the present occasion have given an account of it.

As regards the best mode of realising economy of blood in amputation at the hip-joint, there can be little doubt that of the various methods suggested and practised with this object, that introduced by Mr. Davy is *facile princeps*. It is easy of application, does not impede rapidity of manipulation on the part of the surgeon—a matter of no small moment in this operation—leaves the patient's respiration unimpeded, and in preventing hæmorrhage is at once effectual and satisfactory.

ART. XIII.—*Addison's Disease.*[b] By KENDAL FRANKS, M.D., Univ. Dubl.; F.R.C.S.I.; Surgeon to the Adelaide Hospital; Surgeon to the Dublin Throat and Ear Hospital; ex-Sch., Trin. Coll. Dubl., &c.

So short a time ago as 1855 the first treatise "On the Local and Constitutional Effects of Disease of the Suprarenal Capsules" [c] was published by Addison. This treatise naturally excited a great deal of interest, and since that year a great deal of attention has been paid to these organs, both in their healthy and diseased conditions, in order to ascertain the following points:—First, what is their function in the economy of the human system? secondly,

[a] British Med. Journal, April 27, 1878.

[b] Read at the Meeting of the University Biological Association, Jan., 1882.

[c] London, 1855.

are the train of symptoms detailed by Addison consequent on disease of these organs? thirdly, what is this disease? and fourthly, what is the connexion between the disease and the symptoms it gives rise to? Physicians, physiologists, and histologists, have all vied with each other to elucidate these points in their several departments; but though they have added much to the interest of the disease and to its history, none have succeeded as yet in placing even one of these points beyond the range of dispute.

The account of this disease, as originally given by Addison himself, is as true and graphic to-day as it was then, most of what he regarded as debatable ground is debatable ground still, and the conclusions at which he arrived are still generally regarded as correct; and when differences of opinion have arisen it has been due to the publication of many cases as cases of Addison's disease which presented "neither the clinical features nor the pathological conditions described by Addison," and were therefore not cases in point at all. I cannot do better than give the terse description which Addison wrote himself. He tells us that he had "for a long period met with a very remarkable form of anæmia, occurring without any discoverable cause whatever—cases in which there had been no previous loss of blood, no exhausting diarrhœa, no chlorosis, no purpura, no renal, splenic, miasmatic, glandular, strumous, or malignant disease." This disease he termed *idiopathic anæmia.* Detailing the chief features presented by such a case, he says:—"The patient gradually becomes languid, weak, and indisposed either to bodily or mental exertion; appetite impaired or entirely lost; the white of the eyes becomes pearly; the pulse small and feeble, or perhaps soft and compressible; the body wastes without presenting the dry, shrivelled skin and extreme emaciation usually attendant on protracted malignant diseases; slight pain and uneasiness is from time to time referred to the region of the stomach; and there is occasional actual vomiting, which in one instance was both urgent and distressing; and it is by no means uncommon for the patient to manifest indications of disturbed cerebral circulation. Notwithstanding these unequivocal signs of feeble circulation, anæmia, and general prostration, neither the most diligent inquiry nor the most careful physical examination tends to throw the slightest gleam of light upon the precise nature of the patient's malady, nor do we succeed in fixing upon any special lesion as the cause of this gradual and extraordi-

nary change. . . . With more or less of these symptoms we discover most remarkable and, as far as I know, characteristic discoloration taking place in the skin—sufficiently marked, indeed, as generally to have attracted the attention of the patient himself, or the patient's friends. The discoloration pervades the whole surface of the body, but is commonly most strongly manifested on the face, neck, superior extremities, penis, and scrotum, in the flexures of the axillæ, and around the navel. It may be said to present a dingy or smoky appearance, or various shades of deep amber or chestnut brown, and in one instance the skin was so universally and so deeply darkened that but for the features the patient might have been mistaken for a mulatto. . . . If I see a patient who presents this peculiar discoloration of the skin, and with this a certain train and combination of general symptoms—a pearly eye, a feeble pulse, a disposition to strongly marked anæmia, and a few other symptoms less constant—I say, this is a case in which you will find disorganisation of the suprarenal capsules."

Thus Addison's disease presents three salient features, which may thus be enunciated:—Firstly, a marked asthenia, generally of an extreme kind and without any apparent or even discoverable cause; secondly, a remarkable bronzing of the skin, more or less intense, involving the whole cutaneous surface, though some parts, especially those exposed to the sun, show the discoloration more clearly than others; thirdly, a diseased condition of the suprarenal capsules. These three elements "present such striking and distinguishing features," says Dr. Wilks,[a] "that if the first two are found to be present the third may be safely predicated."

On the 22nd of July last there was admitted to the Brooke Ward of the Adelaide Hospital a girl, E. M'C., aged fourteen years, who was brought to the waiting-room by her friends. She was in a very prostrate state, hardly able to sit on the form. Whilst I was talking to her friends she nearly fainted, and had to be placed lying down on her back. The pulse was almost imperceptible, her voice nearly inaudible, and she seemed scarcely able to keep her eyes open. She was at once removed to bed. The following history of her illness was obtained:—She was in good health until two months since, when she first began to notice that exertion of any kind produced invariably a feeling of great lassitude, and that in consequence she was disinclined to take any exercise. She noticed also that although naturally of a dark complexion

[a] Reynolds' System of Medicine. Vol. V., p. 354. 1879.

her skin was gradually getting darker, especially that on her face, neck, and backs of her hands. She attributed this to the influence of the sun. She also suffered from pains in the loins and hypogastric region. She complained of nothing else. At this time the patient was living at Bray. Her father and mother were both stated to have died of phthisis. The mother had a dark complexion, but the father was fair. The girl had finely-cut features, dark black hair and dark eyes. The conjunctivæ were of a pearly whiteness, transparent and with a bluish tinge; eyelashes very long and dark. She was well-formed and well-developed, and the body was well-nourished. Her skin was soft and moist. Her chief complaint was extreme weakness, with coldness and numbness of the extremities. She suffered from constant retching. For some days past she complained of mists coming over her eyes. The lungs were carefully examined; no dulness was elicited on percussion over either pulmonary region, and respiratory sounds were equal over each side; immediately beneath both clavicles there was some harshness in breathing, but the sounds were otherwise healthy; there was no cough or expectoration. The heart was normally placed; its sounds were very feeble; to the stethoscope the first sound was all but inaudible, but could just be detected by placing the ear directly over the cardia. The pulse was small, weak, and compressible—120. The temperature was normal. The appetite was bad, the tongue fairly clean, and the bowels regular. She had menstruated twice—once in October, 1880, and once in February last. The abdomen was retracted and boat-shaped; there was no marked tenderness on pressure over any part of it; it was not tumefied. The urine was normal in colour, and on examination showed nothing peculiar. The urea was not estimated. On the radial aspect of the right wrist there was a patch about the size of a shilling, deeply pigmented. The whole cutaneous surface was very sallow and bronzed, especially the face, neck, back of the hands, and knees, which were more darkly tinted. There were no other patches than the one mentioned. She was at once ordered a stimulating mixture, containing carbonate of ammonia. She was directed to keep the recumbent position, and brandy was administered.

On the 25th she seemed much weaker; pulse almost imperceptible and 130. I gave directions that she should not be raised in bed, even for feeding, as this might induce fatal syncope. The diagnosis of Addison's disease was made.

About 10 p.m. that night a street band passed in front of the hospital and stopped opposite to it, hooting and yelling, and greatly terrifying the inmates. The patient, E. M'C., had been asleep. She suddenly awoke, hearing the noise, jumped up in bed, with a shriek of terror, and immediately fell back, dead! The autopsy, which took place next morning, about thirteen hours after death, was made by the

resident student, Mr. J. H. Scott, and myself. The details of it I shall presently relate.

The diagnosis in this case was made from the two chief elements in the disease observed during life—profound asthenia and the bronzing of the skin. The first of these, which was so intense that, when I first saw her, in the waiting-room of the hospital, I thought she was in a dying condition. During the three days of her hospital life she was unable to rise in bed, or to make the slightest exertion. I could attribute this weakness to no other ascertainable cause. The skin was natural, soft, and moist; it did not present "a harsh, dry condition of the surface," such as would be found in any other disease accompanied by the same amount of asthenia. The body was fairly nourished, affording "a striking contrast to the failure and exhaustion observable in every other respect."[a] "There is," says Dr. Greenhow, "in uncomplicated cases, comparatively little or no real emaciation, but, on the contrary, together with some appearance of partial wasting, there is always a fair amount, and often a considerable excess, of subcutaneous fat, and the skin remains soft and smooth."

A *post mortem* examination showed some pulmonary disease, some enlargement of the bronchial and mesenteric glands, and a remarkably diseased condition of the suprarenal capsules. All the other organs were healthy. The disease of the lungs was quite insufficient to be the cause of the condition during life. It is, however, most valuable, as helping us to an interpretation of the disease in the suprarenal bodies, and in this way corroborates what has been observed in by far the greater proportion of Addison's disease which have been hitherto recorded.

Before discussing the questions as to the nature of this pathological change in the capsules, and to the method in which the symptoms are produced, I would like to call attention to a set of cases which are sometimes included under the head of Addison's disease, but which do not seem to hold legitimately such a position. The coöption of these cases only adds to the difficulties which already beset the subject in sufficient number, and hence I shall only shortly allude to them.

These cases may be conveniently grouped in two distinct classes:

1st.—Cases in which there is discoloration of the skin, but in which no disease is found subsequently in the suprarenal capsules.

2nd.—Cases in which disease of the suprarenal capsules is found, but in which no bronzing of the skin is produced.

The first of these classes includes many cases in which there is

[a] Greenhow. Croonian Lectures. 1875. P. 11.

undoubted discoloration of the surface, but in some of which the discoloration differs entirely from that observed in Addison's disease. In others there have been many similarities between the discoloration seen and that accompanied by suprarenal disease, but the change in colour can be easily referred to some ascertainable cause. There are many well-known physiological and pathological conditions accompanied by alterations in the colour of the skin. We might as well call every case of albuminous urine a case of Bright's disease, or every case of bronchocele a case of Graves' disease, as classify every case of cutaneous pigmentation as a case of Addison's disease.

In the second place, many cases of suprarenal disease occur which cannot assume the title of Addison. The exact nature of that form of disease which is entitled to this great physician's name is still a matter of controversy.

In a comparatively small number of cases cancer has been seen in the suprarenal capsules, amyloid degeneration, fatty degeneration; sarcomatous growths have been also found. But in most of these cases the typical symptoms of Addison's disease have been absent; and in the few instances in which the symptoms corresponded accurately with the disease, the pathological reports of the cases were extremely meagre, and in some cases were exact descriptions, under erroneous names, of the conditions found in the capsules in a typical case of Addison's disease.

What, then, is the nature of the lesion in the suprarenal capsules? Let me give the details of the *post mortem* on the case which I have already submitted:—

The examination was made thirteen hours after death. Rigor mortis was well marked, the body well nourished, and the skin presenting the remarkable characteristics already mentioned. On examining the contents of the thorax, both lungs showed small patches of lobular pneumonia in each apex. Round these patches, not larger than a small hen's egg, the lung was healthy. A similar piece of consolidated lung was found on the axillary surface of the upper lobe of the left lung. On section these patches showed nodules of caseation, but there was no softening or abscess. The lower lobes of both lungs were hypostatically congested, and the bronchial glands were greatly enlarged. The heart was normal, the left side quite empty; there was no valvular disease. On opening the abdomen there was no evidence of peritonitis anywhere. All the viscera, with the exception of the suprarenal

Fig. 1.

Fig. 2.

ST MARY'S HOSPITAL
RADFORD
LIBRARY
MANCHESTER

α′ Right Suprarenal Capsule.
α″ Left Suprarenal Capsule.
β′ Section of small Tuberculous Mass.
β″ Section of large Tuberculous Mass.

Fig. 3

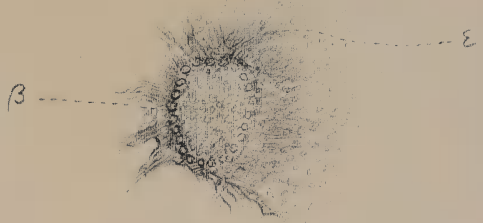
Section taken from right Suprarenal Capsule.

α Giant Cells, branching.
γ Epithelioid Cells.
δ Irregular Cell-growth.

ST MARY'S HOSPITAL
RADFORD
LIBRARY
MANCHESTER

Fig. 4.

Section taken from left Suprarenal Capsule.



β Large Cell, branching.
ε Caseous Mass.

capsules, seemed perfectly healthy. There was enlargement of the mesenteric glands. The suprarenal capsules have been most kindly investigated for me by my friend, Dr. Abraham. The left suprarenal body is enlarged and entirely disorganised (see Fig. 1). It is the seat of masses of caseation, some of which are isolated, many of which have coalesced. No softening of this material has taken place. The right capsule does not present the same amount of disease (Fig. 2). On section it presents small caseous islands. The sections are stained with picrocarmine hæmatoxylin. Dr. Abraham thus reports on the microscopical appearances in each capsule:—"*Right Suprarenal.*—The central parts have the granular, almost structureless appearance of a mass of caseation. This substance, however, is in parts more or less broken up into small and large masses, some of which seem to possess faint nuclei, and a few of the larger ones are apparently polynucleated (Fig. 3). At the periphery the tissue becomes more cellular, the cells being distinct, of different sizes, some very large, with one or more nuclei, or even of the giant cell type, and more or less granular in texture (Fig. 4). Outside this comes the capsule, much altered. The cells and connective bundles are separated by a somewhat similar cell-growth, sometimes around foci, and by large development of adipose tissue. *Left Suprarenal Capsule.*—The caseation in this case has become more extensive, and in parts of the cheesy mass cretaceous deposit has taken place. Most of the proper substance of the gland is thereby replaced. The periphery, as before, passes into a similar, irregular, scrofulous cell-growth."

This account of the pathological condition of the suprarenal capsules in this case points strongly to the conclusion that the disease was tubercular. The same appearances to the naked eye were observed in the small patches of consolidation found in the lungs. I regret that these were not retained for microscopical examination, but I can say, from my own observation of them on section, that they showed to the eye the same condition as is found in phthisis, local patches of consolidation, containing foci of caseous degeneration; and I think we may infer that, under the microscope, they would have exhibited the same pathological structure as that found in the capsules. Moreover, the girl's parents were both stated to have died of phthisis. This agrees with what has been observed in the majority of cases of true morbus Addisonii. In these, caseous masses are found in the suprarenal bodies, of various sizes, which have their origin in the medullary

portion. As these increase in size they encroach on the cortical portion, and at last involve the capsule of these bodies themselves, exciting in them a low form of inflammation, which at first causes thickening, and at last ends in sclerosis.[a]

Virchow,[b] who has carefully examined these masses, gives the following description of them :—"The development of the tubercular masses begins in this case, as is the rule in others, in the medullary tissue. On making a section through the suprarenal capsule, we observe occasionally in the middle of the medullary portion the first stages of the development, in the form of small gray nodules. These gradually increase in size, become caseous, amalgamate with one another, and thereby produce the caseous masses. It not unfrequently occurs that this process is but partial, and that both internally and externally some normal tissue remains, while all in the centre has become metamorphosed. Again, the process may proceed by the development of new nodules, not only in the medullary, but also in the cortical portions, around the circumference of the original mass, with which they subsequently blend. In this way gradually every trace of proper tissue disappears, and we have nothing left but a firm caseous mass, which reaches the surface on one or both sides, or even occasionally includes every atom of the organ. As a rule, however, in such extensive disease as this, we do not meet with a single uniform mass, but the whole thing appears lobular, or nodulated, corresponding to the various original foci. These masses have, therefore, an irregular shape, proportionally thicker than the normal form of the organ; they attain occasionally a very considerable size—namely, that of a plum or small hen egg, and possess a firm or even hard consistence."

Greenhow,[c] who gives a synopsis of over 330 reported cases of Addison's disease, 230 of which were *bonâ fide* cases, exhibiting the specific morbid process in the suprarenal capsules, thus writes :—"It is impossible to resist the evidence of clinical facts

[a] The sections were very kindly examined by Professor Purser, who thus expresses his opinion :—"The specimens which you asked me to examine contain a good deal of granulation tissue, which in some few places is arranged in little knots, resembling those seen in tubercle—that is, a large multinucleated cell in the centre, with 'epithelioid cells' around it, the whole surrounded by lymphoid corpuscles. Whether these nodules are part of a general infection of the body by tubercle, or whether they are examples of so-called 'local tuberculosis,' I am, of course, unable to say."

[b] Virchow and Ziemssen. Krankhafte Geschwülste. II. S. 689.

[c] Greenhow. Croonian Lectures. 1875. P. 84.

as to the existence of some affinity between Addison's disease and the tubercular diathesis. By far the larger proportion of the diseases of other organs found in association with Addison's disease of the suprarenal capsules are diseases of tubercular or strumous character. In the typical cases, it is true, the complications are either altogether absent, or are indicated only by small tubercular concretions in the lungs, some of which are described as cheesy, some as calcareous, others as peri-bronchitic nodules, and others, again, simply as indurations in the apices of the lungs. But a very considerable proportion of the other cases are complicated with more or less active tubercular disease; and in a certain small number of cases the inflammatory lesion in the suprarenal capsules has been found coexisting with advanced phthisis or general tuberculosis."

I will quote one other authority in support of the tubercular origin of the disease in the suprarenal capsules in Addison's disease. Merkel[a] thus writes:—"My own observations have shown me, in cases where the entire structure had not been broken down into a mass of detritus, that it consists in a proliferation of small cells, lying in a fine reticulum, which includes giant cells in great numbers. I have never seen any appearance which so forcibly reminded me of Schüppel's drawings as in tuberculosis of the suprarenal capsules. If we take into consideration along with this that undoubted beginnings have often been observed, as small miliary, translucent nodules, occurring in the medullary portion, and, further, that well-marked pulmonary tuberculosis and phthisis is a very frequent concomitant of this disease, we shall be justified, even without actually asserting giant cells to be characteristic of tubercle, in describing the process in question as tubercular." These giant cells, I may observe here, are seen in the sections of the suprarenal bodies, drawings of which Dr. Abraham has kindly made for me. (See Figs. 3 and 4.) They have generally been accepted, after Schüppel, to be pathognomonic of true tubercle; lately, however, they have been stated to be merely characteristic of chronic inflammatory processes in lymphatic structures.

The great opponent of the tubercular origin of Addison's disease is Dr. Wilks; and I must for a few minutes call attention to the position he takes up on this question.[b] He holds, with many of the authors I have already quoted, that the disease found in the

[a] Ziemssen's Cyclopædia. Vol. VIII., p. 651.
[b] Reynolds' System. Vol. V., p. 355.

ST MARY'S HOSPITAL RADFORD LIBRARY

suprarenal capsules, associated with Addison's name, is uniformly the same; but is this scrofulous? Dr. Wilks thinks it is not. He says the pathological condition is "peculiar, uniform in character, and primary in its nature." The morbid material found in the capsules he regards, "provisionally at least, as a result of the ordinary changes which take place in inflammatory lymph." It is found in three stages. In the first, or the earliest in which the disease has been met with, "the organs have been found much increased in size, reaching to two or three times that of the natural dimensions of the capsules in a state of health. At this period it is rare to find a trace of the original structure remaining, but in its place there exists a firm, solid substance, which the older pathologists were accustomed to style lardaceous—not, however, intending to signify that peculiar matter known in more recent times as amyloid. It is an albuminoid material, of a greyish-white colour, homogeneous in appearance, firm when cut, and on section having a somewhat translucent character. It is the earliest known change which the capsule undergoes, and at this time nearly all the original structure has been destroyed, or, if any be left, it is recognised only by small dark spots which are the remnants of the cortical substance. The suprarenal organ has been thus converted into a morbid mass or lump of albuminous material, having very slight resemblance to its original form." In the second stage this "albuminoid material undergoes degenerative changes, commencing in isolated spots, so that it presents on the cut surface a number of yellow dots; these increase in size until the whole of the diseased organ is seen to have scattered through it a number of rounded yellow masses, about the size of peas, and *resembling* in outward appearance soft, yellow tubercle." In the third stage "the whole of the originally formed material may be changed into this yellow substance; and now it is that it presents the ordinary appearance of a mass of yellow tubercle. During this degenerative process the whole organ shrinks and becomes reduced to about its original dimensions. After this still further changes may ensue, as in similar deposits in the other parts of the body; and thus a drying-up process may take place and a cretaceous matter be formed. . . . In many cases a still further change ensues by a process of softening, and the solid material becomes converted into a creamy or pus-like fluid." The supposition of the disease arising from a chronic inflammation explains, according to Dr. Wilks, the occurrence of Addison's

disease associated with caries in the vertebræ, or in cases where a blow on the back or a strain has been cited as the first incentive to the disease.

But, on the other hand, when the scrofulous diathesis exists in a person, is not some local injury the determining cause as to the locality in which the diathesis will manifest itself? Do we not look always for an exciting cause in cases of hip-joint disease, even when we find it occurring in one of a decidedly scrofulous family? Is not a cold, a localised pneumonia, the origin of many cases of phthisis? And, again, I ask, is the course of the disease in the suprarenal capsules, as pictured by Dr. Wilks, in the three stages he describes, so much at variance with the course which we know scrofulous inflammatory products do take in other parts of the body, as to forbid us calling the deposit in the capsules in Addison's disease by the term "scrofulous?"

We have not yet sounded to the bottom of the difficulties which beset this interesting disease, and I will state yet another before I bring this paper to a close.

We have, as has been seen, a distinct pathological condition found in the capsules, and with this a train of very remarkable symptoms. The frequency with which these are associated together prevents us arriving at any other conclusion than that the one is a consequence of the other, and that the disease in the capsules is the cause, direct or indirect, of the symptoms. But how can we explain this cause and effect? The *rôle* played by the suprarenal bodies in the general harmony of the human physiological functions is so little understood—is so much a matter of uncertainty—that we can arrive at no conclusion based on this *rôle*. When the suprarenal capsules are destroyed by this disease, are the symptoms produced due to the loss of function of these bodies, whatever that function may be? Such an hypothesis cannot be supported by facts. Many cases are on record in which the suprarenal bodies were the seat of other morbid processes, such as cancer, and that to such an extent as to have completely deprived the organs of any function whatever, and yet none of the peculiar symptoms of Addison's disease were present. Again, in many cases of Addison's disease, the state in which the capsules were found after death pointed to a long period of total loss of function, and yet the history of the case has been as short as six months. This is remarkably exemplified in the case I have detailed. The capsules, especially the left, are extensively diseased,

and must have been devoid of function for months, if not years, and yet the first symptoms of her illness dated back for only two months.

These considerations were evident to Addison himself, and he felt that he must look elsewhere for an explanation. He, accordingly, suggested what is at present the theory most universally accepted:—

"We know," he says, "that these organs are situated in the immediate vicinity, and in contact with the solar plexus and the semilunar ganglia, and receive from them a large supply of nerves, and who could tell what influence the contact of these diseased organs might have on these great nerve-centres, and what share that secondary effect might have on the general health, and in the production of the symptoms presented?"

In the year 1854 (that is the year before Addison published his treatise on the disease which is associated with his name) Köllicker promulgated the following views as to the structure of the suprarenal capsules:[a]—"I consider the cortical and medullary portions to be physiologically distinct. The former may be considered as belonging to the category of the so-called vascular glands, and doubtless is in some way related to the process of secretion, while the latter, owing to its extraordinary richness in nerve tissue, must be described as an appendage to the nervous system, in which the cellular elements and the plexus of nerves either react, one upon the other, in a manner similar to that obtaining in grey nerve tissue, or else are actually directly connected."

More recently still, Leydig has expanded this view of the structure of the medullary portion. He states that the cells found imbedded in its meshes are of irregular form, and exhibit processes like the multipolar ganglion cells of the brain and spinal cord. However, the extraordinary number of nerves which enter these bodies (Köllicker having counted thirty-three nerve trunks going into the right suprarenal capsule) has led Leydig to believe that the nerve fibres arise in these ganglion cells, and that the medullary portion of the suprarenal capsules is essentially a ganglionic nerve centre. The nerves of the capsules come for the most part from the semilunar ganglia and solar plexus; some are derived from the pneumogastric and phrenic nerves, as has been demonstrated by Bergmann.[b]

[a] Köllicker. Handbuch der Gewebelehre. Leipzic. 1855.
[b] Köllicker's Manual of Human Histology. Vol. II., p. 218.

Now, when the suprarenal bodies take on the morbid process which we find in Addison's disease, it is manifest that the nervous structures, which are so intimately connected with them, must suffer in proportion. But we must recollect that not only the connective tissue forming the investing membrane of these bodies takes on the inflammatory process, but that this extends to the connective tissue in the neighbourhood through which the nerves pass to reach these organs, and involves the semilunar ganglia and solar plexus.

"In many cases," says Greenhow, "the nerves at some distance from the inflammatory tissue have been found enlarged by reason of the increased thickness of their neurilemma—a condition which could only arise from the further extension of the inflammatory process along their sheaths. . . . This undue thickening of the neurilemma must naturally tend to produce irritation, and ultimately atrophy, of the compressed medullary portions of the nerves."

The changes in the nerves, then, are of two kinds, "corresponding to two different stages of disease. In the earlier stage the nerves connected with the suprarenal capsules and the semilunar ganglia are in a state of irritation. . . . The second stage, attended by more or less impairment of function, consists in the atrophy and fatty degeneration of the nerves."

These conditions of the nerves have actually been found in recent autopsies. Thus, the whole sympathetic nervous system has been found reddened and swollen; the semilunar ganglion has been found enlarged; the ganglionic cells have been filled with granular pigment, the nucleus often being absent; the sympathetic nerve has been found atrophied, and nerve cells have been loaded with fat.

At the International Medical Congress, held in London last August, Dr. Semmola, of Naples, stated that he did not regard the nerve affection as the result of a previous disease in the capsules, but argued that the sequence of events was the reverse. The disease ought to be regarded as a primary disease of the ganglionic nerve-centres; and the anatomical alteration of the suprarenals was, not so much the origin of the disease, but that they represented (when they existed as diseased organs) the last effects of trophic change, produced by the nerves which presided over the nutrition of these organs.

Such an implication of the nervous system, involving the vagi

and the phrenic, would account to a certain extent for some of the more prominent symptoms of Addison's disease. The sighing, the yawning, the gastric disturbance, would point to the pneumogastric. The neurosis of the vasomotors of the abdominal blood-vessels might cause dilatation of these vessels, and a consequent determination of blood to this region, and a simultaneous draining of blood from the brain and heart, giving rise to the pronounced asthenia which corresponds in so many particulars to that produced by severe hæmorrhage.

This theory serves also to explain the discoloration of the skin. Attempts have often been made to offer some explanation of this phenomenon. A probable clue has been afforded by an interesting case reported by Dr. Paget, of Cambridge. It was not a case of Addison's disease, but one of diffuse pigmentation. *Post mortem* examination showed that the capsules were quite healthy, but the nerve plexuses and ganglia were imbedded in and compressed by adventitious growth. It will be important in future to make a careful examination of the nerves, plexuses, and ganglia of the sympathetic system in cases of pigmentation of the skin unaccompanied by Addison's disease.

I have only had time to suggest these explanations of the symptoms. The secondary affection of the nervous structures as the immediate cause of the symptoms is not yet an established fact, and indeed is strongly disputed. Eulenberg and Guttmann, who have tabulated 19 cases in which the symptoms of morbus Addisonii were found associated with pathological conditions in the semilunar ganglia and sympathetic, have also collected 10 cases in which the sympathetic had been examined and found normal. On the other hand it must be conceded, owing to the researches of Lubinoff, who has collected 250 *post mortem* cases to prove it, that these nervous structures may undergo all the changes from irritation to fatty degeneration and atrophy, and yet give rise to none of the symptoms which are peculiar to Addison's disease.

For the present we must be content to wait till further knowledge is gained, and till the light on this subject, which is every day increasing, dissipates the mists which at present hang round this interesting yet incomprehensive disease.

Art. XIV.—*A Case of Apparent Recovery from Morbus Addisonii.*[a]

By J. Magee Finny, M.D., Univ. Dubl.; F.K.Q.C.P.I.; Visiting Physician to, and Lecturer on Clinical Medicine in, the City of Dublin Hospital.

In introducing the subject of Addison's disease, it is not my intention to discuss the many questions connected with its ætiology or pathology, however attractive and interesting such branches of inquiry would doubtless prove, but simply to record a case of the disease, and to exhibit before the Medical Society the patient, who has so far improved as to warrant the idea that, perhaps, more than a transient improvement had taken place, and that the term applicable to the present state of the patient may justly be that of recovery.

Before reading the following notes of the case, I shall only premise that they were taken by one of our most intelligent and painstaking students, Mr., now Dr. MacQuillan, and that I can personally vouch for their accuracy in every detail.

Julia A., aged fifty, a widow, was admitted to the City of Dublin Hospital under my care on May 17, 1880, suffering from great debility and discoloration of the skin.

History.—Born and brought up in the country, she came to town thirty years ago on her marriage. She has had ten children, two of whom are still living; the others died young, two of water on the brain. Six years ago her husband died, and since then she has undergone some hardship. She expresses herself as having been perfectly well up to last Christmas, when she felt herself becoming daily weaker, and losing flesh. The most prominent symptoms were great lassitude, and sudden fits of weakness, and fainting without any attributable cause. She had also pains in the sides and abdomen, which she described as being violent, and extending down the legs, and in particular the right leg. She could neither cough nor take a full breath without feeling great pain. She has never had either vomiting or loss of appetite, but has been greatly distressed by frequent attacks of diarrhœa. The skin of her whole body has, since Christmas, gradually become darker; the pigmentation commenced in the forehead and the front of her chest.

Present Condition.—She is in a state of great prostration and anæmia; the inner surfaces of the eyelids, as well as of the gums and lips, are blanched. The sounds of the heart are very weak; the pulse, which is 96, is weak and very compressible. A venous hum is audible in the

[a] Read before the Medical Society of the King and Queen's College of Physicians, on Wednesday, March 1, 1882. [For the discussion on this paper see page 353.]

patient's neck in the upright posture. Microscopical examination of the blood, drawn from a prick of a needle, showed it to be thin and watery, with a diminution of corpuscles. There was no increase of the white cells, nor irregularity in the outline of the red corpuscles. The patient makes no complaint of any local pains; her appetite, she says, is good, but the least indiscretion induces diarrhœa. In the earlier stages of her illness she suffered from constipation, but the bowels are now too free, diarrhœa being a prominent symptom. She sleeps well, and is remarkably cheerful, her only complaint being the lassitude and weakness, the tendency to fainting, and inability to do anything, or to walk any short distance. The temperature, on admission, reached 97·6° in the axilla, and in the rectum 98°, and during her stay in hospital it never passed this subnormal limit. Her appearance is remarkably suggestive of Addison's disease. Her whole face, with the exception of two spots, one on each temple, is of a sunburnt or rather bronzed colour, and contrasts strongly with the two spots alluded to, which are not only not stained, but lack all colour, being veritable spots of leucoderma, the largest being the size of a sixpenny piece. The sclerotics of the eyes have the pearly-white lustrous character seen in cases of this disorder. The discoloration of the skin is almost universal, but it is best marked on the forehead, front of chest, the axillary folds, the nipples and their areolæ, and the region of the umbilicus. The forearms are also very dark, and seem as if covered with freckles or moles, the pigmentation of many of the darkest spots, some the size of a pea, fading insensibly into the general brownish-yellow colour of the skin. The discoloration was less marked in the skin of the lower extremities, and although the freckles were in great abundance under the knees and over the front of the tibial aspect of the legs, the backs of the calves were much less pigmented than any other part, excepting the palms and soles. The palms of the hands, and soles of the feet, and the adjoining surfaces of the digits were, at the time of her admission, totally exempt from all pigmentation, and this in the palms formed a striking contrast with the bronzing of the back of the hands and of the front and back of the forearms near the wrists. During her stay in hospital some blackish pigmentation appeared on the palmar surface near the tips and bulbs of the ring and little finger of the left hand, and on the second finger of the right hand. The nails of both hands and of a few toes were stained; in many the pigment was along the free border, and also over the body, a space of $\frac{1}{8}$th inch, in which no staining existed, separating them. Again, in some the pigment was laid down in longitudinal streaks of a black colour, the lunulæ of several being discoloured equally with the body of the nail. This pigmentation of the nails and fingers was such that the more inobservant would be at once struck by it. The patient was not one of the class so often met with to whom the title of "dirty" is

applicable; she was, on the contrary, evidently of cleanly habits, and the softness of the palms and fingers plainly told she had not been exposed of late to any such manual labour as could produce discoloration from ingrained dirt. The skin over the body generally was soft and smooth, and was free from all unevenness or elevations in the seat of the mole-like discolorations.

In order to make sure that ingrained dirt had nothing to say to the discoloration, in addition to washing, a test-blister was applied to the left subclavicular region. Removal of the cuticle showed the skin to be pigmented, though not to so deep a colour as before, and as the blistered surface healed, it daily became more and more coloured, till it was even darker than the adjoining skin.

The perversions of pigment were not limited to the skin, but invaded the mucous membrane of the mouth and tongue also. On the latter organ there are several spots varying in size from $\frac{1}{8}$th to $\frac{1}{4}$th of an inch—eight in all—three on the under surface and five along the sides and tip of the tongue; they were of a mulberry hue, looking like ink stains. There was a patch of discoloration, $1\frac{1}{2}$ inch in length by $\frac{1}{2}$-inch in breadth, on the buccal mucous membrane on the right side, and another $\frac{3}{4}$ by $\frac{1}{2}$-inch on the left; that on the right side corresponded to the situation of the lower molars, the long axis of the patch being in the line of the jaw; that on the left side was near to the labial commissure. There were also patches of pigment on the palate corresponding to the junction of the hard and the soft palate, chiefly on the right side; on the inside of the lower lip, and on the lower alveola, corresponding to the second right incisor tooth. The colour of these stains was, in places dark, and bluish, like a dog's mouth, and this was particularly so on the palate, while a brownish shade would best describe the majority of them. There were no irregularities or roughness of the teeth to account for the discoloration, and near the largest patch on the right cheek there was an absence of teeth—but one molar being present.

Owing to the complaints made some months before admission of pains on deep inspiration, I made a very careful examination of all the organs in the thorax and abdomen, but failed to detect any abnormality, as to size or function, which could be accredited with this symptom, or with the present anæmia and discoloration. There was no rigidity of the recti, or tenderness on pressure in either hypochondrium—symptoms present in some cases of Addison's disease.

The urine was, on several occasions, chemically and microscopically examined with the result of proving the absence of renal derivatives and other evidences of organic disease of the kidneys or urinary apparatus. The total quantity of urine in twenty-four hours was forty-two ounces; re-action acid; specific gravity 1020; free from albumen (by the heat and nitric acid tests). On testing quantitively it yielded but 5·6 grains of

urea to the ounce; or 252 grains in the twenty-four hours—somewhat more than half the normal amount of urea.

The line of treatment adopted was based on the prominent symptoms of asthenia and anæmia. The former indication was met by building her up with eggs, beef-tea, wine, and as much other nourishing diet as could be safely borne, and by medicines directed to strengthen and stimulate the heart, and the other by preparations of iron and arsenic. I was induced to give the latter drug from the great and notable good results which followed its administration in cases of idiopathic anæmia,[a] cases in which the cause of the anæmia could be as little defined as in this patient. Under this course she made steady improvement, as regards the heart's action and her general strength, for a fortnight, when it was both interrupted and retarded by the occurrence of phlegmasia dolens of the left leg. At the beginning the femoral vein was painful, and the saphena was hardened. The swelling was general, as measurements of May 28th show:—

	Ankle.	Calf.	Thigh.
Left leg, . . .	7	$9\frac{5}{8}$	12
Right leg, . . .	$6\frac{1}{4}$	$8\frac{1}{8}$	$9\frac{7}{8}$
Difference in favour of left,	$\frac{3}{4}$	$1\frac{1}{2}$	$2\frac{1}{8}$

On June 23rd the left leg was still larger, in these three measurements, by $\frac{1}{4}$-inch, $1\frac{1}{4}$, and 1 inch respectively. It was very remarkable how the usual white appearance of phlegmasia was absent in this case. The bronzing was a little less deep, but that was all. During this attack the heart, for some days in the beginning of June, became irregular, the pulse being 96, with a complete intermission every tenth beat, both at heart and wrist. In spite of this intercurrent attack, which threw her back considerably, the patient left hospital at the end of June decidedly improved; the discoloration had not altered in the mouth, but the bronzing had become markedly less on the forehead and the fronts of the legs, and her strength had improved, so that she was able to sit up and walk about the ward without fainting; and she expressed herself as being nearly as well as ever she had been. On leaving, her intention was to go to the Convalescent Home, but the fatigue of going to the office and waiting for examination was too much for her, as she became deadly faint, and remained for so long a time in that state that her daughter and those about thought she was dying, and they brought her home to her wretched lodgings in Winetavern-street.

I then lost sight of her till Nov. 10th, 1880, when she visited the hospital, and the following note was taken by Dr. A. Woodroffe, who was at that time my clinical assistant, and who had, with Dr. MacQuillan

[a] Brit. Med. Journ., Jan., 1881.

and others, daily watched and noted her case. He writes:—"Julia A. looks greatly improved. She is much fatter. The sclerotics are still pearly-looking. The colour follows the same outline on the face, but is of a lighter shade. The leucoderma on the upper part of the forehead remains unaltered. The marks have disappeared from the mouth, with the exception of a very slight one on the lip. The colour of the body is also lighter. Some dark stains still seen on the arms. The nails and fingers are almost free from the inky and brown stains. She complains of weakness and pain in the loins, and suffers from occasional attacks of diarrhœa. Her left leg swells a little after standing."

From Nov., 1880, to the present she has not required any treatment, and she is now able to walk a couple of miles without much fatigue, and, when seen last week, she presented little of the original disease for which she came under my care. A small woman, she is fairly well nourished; the face no longer attracts notice, and all the pigmentary changes in the mouth and hands, as well as of the body generally, have totally disappeared.

The first point, alike in order and in importance, in connexion with the foregoing case, one to which, naturally, the minds of the members of the Society will be directed, is the question of diagnosis—Was this case really a case of the rare disease, described by Addison, or was it but a group of coincidences, that the skin was discoloured, and that the constitutional symptoms, peculiar to this disorder, were present in this patient?

It may be worth while to quote his *verba ipsissima*, therefore, for the purpose of comparison, although in doing so I shall but recall what is familiar to many of my hearers. Dr. Addison[a] says he had "for a long period met with a very remarkable form of general anæmia, occurring without any discoverable cause whatever—cases in which there had been no previous loss of blood, no exhausting diarrhœa, no chlorosis, no purpura, no renal, splenic, miasmatic, glandular, strumous, or malignant disease." "The disease presented in every instance the same general character, pursued a similar course, and with scarcely a single exception was followed, after a variable period, by the same fatal result." "The leading and characteristic features of the morbid state were anæmia, general languor and debility, remarkable feebleness of the heart's action, irritability of the stomach, and a peculiar change of colour in the skin, occurring in connexion with a diseased condition of the suprarenal capsules." "This discoloration per-

[a] Dr. Addison's Works. Pp. 212, *et seq.* New Syd. Soc., 1868.

ST. MARY'S HOSPITAL RADFORD LIBRARY MANCHESTER

vades the whole surface of the body, but is commonly most strongly manifested on the face, neck, superior extremities, penis, and scrotum, in the flexure of the axillæ, and round the navel. It may be said to present a dingy or smoky appearance, or various shades of deep amber or chestnut brown; and in one instance the skin was so universally and so deeply darkened, that but for these features the patient might have been mistaken for a mulatto." If to this we add the occurrence of "a darkish streak usually on the commissure of the lips, and occasionally of vomitings, palpitations, wasting of the body, a remarkable weakness of the heart's action, and a soft, compressible pulse, without commensurate emaciation," the picture as given by Dr. Addison is complete.

Dr. Greenhow,[a] to whose valuable and exhaustive monograph on Addison's disease I am largely indebted, in common with all who study it, and to which I shall have occasion again to refer, adds the following symptoms as being of great importance:—"The temperature as a rule is rather below normal; the skin and extremities are cool, if not cold, to the touch; the urine is often small in quantity and generally of low specific gravity and deficient in solid constituents." "The deep discoloration of the areolæ of the nipples may be regarded as one of the most decisive external signs of Addison's disease, and the appearance of small, well-defined black specks, like black moles or freckles, on already discoloured portions of the skin, is, in my experience, another no less certain." He also notes the discoloration of the mucous membrane of the lips, cheeks, and gums, and also upon the tongue, "amongst the strongest characteristic features of the discoloration," and the contrast between the pearly whiteness of the conjunctivæ and the dusky hue of the discoloured skin.

"The diagnosis," he writes, p. 97, "is founded upon the constitutional symptoms, aided, in a large majority of cases, by the presence of more or less of a peculiar change of colour in the skin. It is not always unattended with difficulty, but to those who have any practical acquaintance with the disease it is not, I think, more difficult than the diagnosis of many other chronic diseases."

If now we compare (1) the constitutional and (2) local symptoms of Julia A. with this description, I believe they will agree in so many respects as to warrant me in giving to the disorder the name of Addison's disease.

1. *The constitutional symptoms* presented by my patient were

[a] On Addison's Disease. 1875.

those of anæmia and asthenia—such as general muscular debility, wasting, faintness and breathlessness on any exertion, a subnormal temperature, a diminution of solids in the urine, feebleness of the pulse, and weakness of the heart's action. These symptoms are, indeed, but the expression of profound asthenia and anæmia, as Addison fully recognised, and are not peculiar in themselves to the disorder under consideration, being present in idiopathic anæmia and the advanced stages of other wasting diseases, as cancer, renal and splenic degenerations, &c. Their significance is, however, at once enforced by the fact of the absence of such diseases, as well as of any other known conditions which could produce them. Frequent and careful examinations of the patient, as well as the subsequent progress of the case, preclude the possibility of there being any other cause for her symptoms.

2. *The local* symptoms were equally well pronounced. The pigmentation of the skin was characteristic (*a*) in its situation—face, arms, hands, fingers, axillæ, areolæ of nipples; (*b*) in its nature, varying in shade from a dingy yellow to an olive black, the colour fading imperceptibly from the darker to the lighter shades; (*c*) in the deeper pigmentation which followed the application of a test-blister; and (*d*) in the unmistakable staining of the mucous membrane of the lips, palate, gums, and buccal surface, and the inky discoloration of the tip of the tongue, exactly corresponding in colour, though not in extent, with the admirable plate depicted by Dr. Greenhow.[a]

A careful and unbiassed consideration of the case taken in its entirety, with a due regard to both the general constitutional symptoms and the local phenomena, has forced the conviction on my mind, as I feel confident it will operate similarly on the minds of the most sceptical of those who hear me, that the patient was really suffering from the disease to which is attached the name of Addison. I say, advisedly, I was forced to this conclusion; for when I observed that under treatment the pigmentation became less marked, and that after seven months it had disappeared altogether from the mouth and fingers—a fact at variance with the vast majority of recorded cases—and that after nearly two years the patient had largely regained health and strength, I acknowledge that, for a time, my belief in my first diagnosis was considerably shaken, although that diagnosis was approved and shared in by most of my medical friends, who kindly gave me their

[a] On Addison's Disease. 1875. Plate I. Page 14.

assistance and advice in seeing the patient while in the City of Dublin Hospital. I have not, indeed, blinded my eyes to the fact that certain symptoms in my case do not tally exactly with those which are commonly described as prominent features of the disease, nor do I fail to feel the force of the unusual course of the case, in that, so far, there seems to be no probability of death, and of *post mortem* evidence of suprarenal disease—upon which Dr. Greenhow seems to lay such stress as almost to exclude all cases, in which the evidence of tubercular disease of the capsules was wanting, as undeserving of the title I have given it. Were the constitutional symptoms, indeed, the only basis of my diagnosis, or did the local pigmentation alone form its superstructure, I might well expect the correctness of that diagnosis to be questioned and the conclusions drawn from such ill-grounded premises to be doubted; but, when the less important and less valuable sign of morbus Addisonii, that of discoloration of the skin and mucous membranes, is associated with symptoms peculiar to this special disease, in the absence of other coexistent disease, and for which no other pathological cause can be dicovered or suggested—a reservation made by Addison himself (p. 54)—I am of opinion that, without waiting for the crucial test of an autopsy, notwithstanding the disappearance of those prominent feature and characteristic symptoms, and in spite of a return of the patient to her former health and strength—I am of opinion that, as a clinical physician, I am justified in calling this case one of Addison's disease.

It is, indeed, an acknowledged fact that the course of cases of Addison's disease is one often of prolonged duration, even to several years, although in others the illness may last but four, six, or twelve months. In these cases the discoloration of the skin may be either absent or but slight. On this subject Dr. Greenhow writes :—" It is, however, undeniable that the discoloration seems to be most intense and universal in very slow chronic cases which have been under observation for periods of from one to seven years. The progress of the disease is by no means always that of steady advance. There have been remarkable remissions in some of the best-marked cases, during which the patient has been able temporarily to resume his ordinary occupations, and these have even occurred two or three times in the same case, and yet the patient eventually died of the disease." " The prognosis is invariably grave as regards the ultimate result, for the disease is obviously inca-

pable of cure; but it is, at the same time, in no small degree amenable to treatment in respect of delaying its progress; and unless the illness has arrived at its latest stage, it is impossible to say to what extent life may be prolonged under favourable circumstances" (p. 97).

Such a result may be the termination of my patient, and it would be presumptuous of me to ignore this possibility; but perhaps one may hope for a more favourable future, from the subsequent statement that Dr. Greenhow had never seen the discoloration to disappear after it had been distinctly marked, although during periods of improvement it became less deep.

I have made extensive research on the subject of recovery of patients suffering from Addison's disease, and I confess with but negative results. Dr. M'Call Anderson three years ago submitted to the Glasgow Medico-Chirurgical Society a case for which he properly did not claim a cure, but as illustrating the great improvement resulting from what he termed a rational line of treatment. Sufficient time, however, had not elapsed to convey any degree of certainty of the improvement being permanent.

As I stated in the commencement of my paper that I did not intend to enter on the pathology of the disease, so I deem it beyond the scope of this clinical record to enter upon the question of the diagnosis of the case from those cases which by their cutaneous discoloration may be supposed to resemble that of Addison's disease. I believe there can be no question as to its *not* being either one of chloasma (Tinea Versicolor) or of dirt (Vagabondenkranheit, Vogt), nor in any way due to those chronic conditions in which altered pigmentation is present.

Before concluding, however, I would wish to call attention to the occurrence of phlegmasia dolens, and to the coexistence of leucodermatous patches. The latter is a rare complication, though not unknown to Addison. He says (p. 215) "that in one instance there were, in the midst of this dark mottling, certain insular portions of the integument presenting a blanched or morbidly white appearance, either in consequence of these portions having remained altogether unaffected by the disease, and thereby contrasting strongly with the surrounding skin, or, as I believe, from an actual defect of colouring matter in these parts." Dr. M'Call Anderson, in the paper referred to, gives the notes of a case of morbus Addisonii in which the backs of the hands and forearms were the seat of vitiligo (or leucoderma), and Dr. Greenhow has

reported one or two cases of a similar nature. Dr. Anderson, as I believe correctly, connects the discoloration and perversions of pigmentation in both these cutaneous disorders together, in so far that each is dependent upon perverted innervation of the sympathetic nerve.

I have myself met with but two instances of leucoderma out of several hundred cases of skin disease. It is at best a very rare affection, and characterised by brown patches, in the centre of which the skin is of a dead white colour—or, more correctly speaking, colourless; these central patches vary in size from a $\frac{1}{4}$ to 4 inches in diameter.

As to the other complication—phlegmasia dolens—I conceive that the anæmic state, without a relative loss of fibrin from the blood, would be adequate to account for it, similarly as we meet it in cases of prolonged fevers—particularly enteric fever; and that though its occurrence in Addison's disease may be, and, as I believe is, unique, it is more a matter of interest than for surprise.

ART. XV.—*Poisoning by Chloral Hydrate.* By GEORGE F. DUFFEY, M.D., Dubl.; Physician to Mercer's Hospital, &c.

WHEN about leaving my hospital one morning recently, I was hastily summoned by the resident medical officer, Mr. Keenan, to see a man just brought in by a waiter in a hotel in the neighbourhood. The waiter stated that the man, who was a stranger, had rung for him a short time previously, and told him that he had taken poison. Seeing that he was alarmingly ill, he was at once removed to hospital. No further information was obtainable. The patient was a large, bloated-looking man, about forty years of age. He was in a deep sleep—from which he could not be aroused—and perfectly insensible. Mr. Keenan naturally suspected that the poison he had taken was some preparation of opium, and called my attention to a peculiar odour from the man's breath, which, although it did not strike me at the time as being characteristic of that article or of any other particular drug, had, at any rate, as I thought, an alcoholic smell. As the man was in a state of such profound narcosis, and as the urgency of his symptoms left little time for further surmises, I concluded that he had probably taken laudanum in some whisky or brandy, and that the latter had masked the odour of the former. On forcibly opening his closed eyelids his pupils were found moderately contracted and

his conjunctivæ were anæsthetic. Pricking the skin caused no response. His pulse was quick and full, and his respirations were shallow and slow. A hypodermic injection of five minims of the liquor atropiæ sulphatis, B. P., was at once given, and in a few minutes afterwards a hypodermic injection of three-tenths of a grain of apomorphia. To expedite the action of the emetic, and to prevent as much as possible the further absorption of any of the poison, it was determined to wash out the stomach, and the appliances for doing so being at hand—from having been used a short time previously in a case of dilatation of the stomach under treatment in the hospital—this was done forthwith. At first, owing to the great insensibility, some difficulty was experienced in passing the tube. This, however, was overcome, and a large quantity of tepid water successively introduced into and syphoned from the stomach. The respirations had now become very shallow and stertorous, the pulse quicker and more feeble, the complexion dusky, and the extremities cold. The pupils were still contracted. A second injection of five minims of liq. atropiæ—equivalent with the former to gr. $\frac{1}{12}$th of atropia—was now given, and he was laid on a mattress before a large fire. The shallowness and slowness of the respirations increasing, and the heart evidently failing also, a large sinapism was applied to the chest, and artificial respiration, after the method recommended by Dr. Howard, of New York,[a] resorted to. In a short time this produced a satisfactory change. The normal respiratory movements of the chest walls were gradually resumed, colour returned to his face, and he became warmer. The pupils were now widely dilated, but he was still so insensible to external impressions that severe bastinadoing of his stocking-covered feet produced no effect. Subsequently he showed signs of gradually returning consciousness by moving his hands, &c., and after more than an hour's anxious exertions, he was removed to a warm bed, still in a profound sleep, but saved apparently from imminent death. In the afternoon he awoke for a few minutes, and was given a cup of strong coffee, but did not recover any consciousness until about eight hours after the attempted suicide. It was then gathered from him that we had been mistaken as to the nature of the poison, and that it was chloral hydrate he had taken, and not opium. He was still very soporose and confused, but the following morning was quite rational, although in a state of considerable nervous excitement,

[a] Brit. Med. Jour. 1877. Vol. II., p. 297.

ST. MARY'S HOSPITAL RADFORD LIBRARY

and weak. The next day he was discharged from hospital. He informed us that he was an army pensioner, from the Ordnance Survey Department, and that he knew something about medicines and their effects. For three weeks previously he had been travelling about, drinking spirits largely, eating little or nothing, and sleeping scarcely at all. Some family matters were also troubling his mind. For the relief of the insomnia he had procured powders containing 30 grains of chloral hydrate in each. One dose of this amount procured no sleep, neither did two. On the morning of the attempted suicide, "in a fit of madness," he took four of these powders, = 120 grains, in one dose. After doing so he felt a sudden sleepiness come over him, but had sufficient time to ring the bell for the waiter, and to tell him that he had taken poison, and to bid him call the priest. He remembered no more until he awoke in the hospital. Judging from some papers left by him in the hotel, the act was premeditated.

Although the treatment of the foregoing case was adopted under the erroneous idea that the symptoms were those of opium poisoning, the successful result establishes the antagonism of chloral and atropia, and adds another to the list of cases of poisoning with chloral successfully treated by the hypodermic administration of atropia. To mistake chloral poisoning for opium poisoning is perhaps excusable when the great similarity of the symptoms produced by these drugs is considered. In both there is profound narcosis and insensibility, failure of respiration and of cardiac action, and contraction of the pupils. At least one such mistake has been made before. Husemann, quoted by Bartholow in his Cartwright Lectures,[a] narrates a striking case of the similar accidental use of atropia in poisoning by chloral:—"A man took from 300 to 360 grains of chloral hydrate, was profoundly chloralised, and, as his pupils were minutely contracted, it was supposed that the narcosis was due to morphia. Acting on this supposition, an injection of $1\frac{1}{2}$ milligramme (about $\frac{1}{40}$ grain) of atropia was practised. Neither the pupil nor the respiration was affected. Faradisation with the electric brush, mustard plasters, cold douche to the head and breast, and other measures were resorted to besides; but the beneficial influence of the atropia is regarded by Husemann as hardly doubtful." Fortunately, the treatment of poisoning by opium and by chloral hydrate being similar, the patient in neither case suffered from the mistake.

[a] On the Antagonism between Medicines. P. 73.

The condition of the pupils in cases of chloral poisoning has been a matter of some dispute. Dr. Kane—who has published in the *New York Medical Record* for 1880–81 a series of valuable papers on chloral hydrate, to which I am indebted for much information—states that "the pupils are, in the majority of cases, contracted, occasionally irregular, and rarely dilated." Drs. B. W. Richardson and Cleveland, however, have reported cases in which the pupil was dilated. Dr. Coghill, who publishes[a] a fatal case in which the pupils were "strongly contracted to the size of a pin's head," attempts to reconcile the differences between these observations by supposing the action of the drug in the one case to be rapid, and in the other case to be slow. This theory, however, is disproved by Mr. William Sedgewick's careful analysis of a large number of recorded cases of poisoning by chloral hydrate. From the facts he adduces, it must be admitted that contraction of the pupils is the rule, and that dilatation is an altogether exceptional phenomenon during the hypnotism produced by this drug in the human subject.[b]

The antagonism of chloral and atropia was, Bartholow states, first studied by himself. He observes that a most obvious and important antagonism exists between the action of these agents on the circulation and respiration. This is confirmed by experimental trials on animals, and by clinical observations on man. Chloral in toxic doses suspends the cerebral functions. It acts in the same way on the spinal cord; it suspends the reflex functions and motility. The action of the heart is enfeebled, the arterial tension is lowered, and a very considerable reduction of temperature is caused. The respiration is slowed, then made irregular and shallow, and finally arrested. Death is caused by paralysis of the heart or of the respiration, or by the simultaneous arrest of both functions.[c] The opposite physiological effects of atropia are too well known to need recapitulation. But while, therefore, as Bartholow well points out, the good effects of atropia in preventing death from chloral by failure of the heart's action, or of the respiratory function, are probably very great, the converse is not necessarily true.

Although it is not claimed that atropia is in every respect a physiological antidote to chloral, yet it distinctly counteracts the

[a] Brit. Med. Jour. 1879. Vol. I., p. 969.
[b] Brit. Med. Jour. 1879. Vol. II., p. 481.
[c] Bartholow. Loc. cit., p. 70.

mode by which death from poisoning by that drug tends to occur. The inhalation of the nitrite of amyl, first successfully used by Dr. Coghill[a] in a case of chloral poisoning, acts probably also in a similar manner. The value of strychnia in cases of chloral poisoning is not so well established as that of chloral hydrate in cases of poisoning by strychnia, although Dr. Kane refers to recorded cases where strychnia has proved of service. To be of any real service in such cases, however, he says it must be pushed. A hypodermic injection of $\frac{1}{20}$ of a grain, followed by another of $\frac{1}{30}$ or $\frac{1}{40}$ grain in an hour if there is no improvement, should be resorted to. Digitalis and citrate of caffein, subcutaneously, to stimulate the heart, are also recommended. And Dr. Whitla, in his recently published work on "Materia Medica," says he has found benefit in cases of chloral poisoning from the hypodermic injection of ether in large doses. In all cases it is essential to maintain the patient's temperature, as Dr. Lauder Brunton has pointed out, and to keep up artificial respiration.

Although the amount of chloral hydrate—120 grains—stated to have been taken in the case I have related is comparatively small, numerous cases in which death has followed a much smaller quantity are given by Dr. Kane; and a dose of ten grains has been known to have produced decided symptoms of poisoning. On the other hand, there is a wonderful tolerance of the drug in some persons. But although chloral hydrate is used so largely, and with such good effect, in some cases of delirium tremens it seems to be established as a general rule that hard drinkers—such as the subject of this communication was—succumb to comparatively small doses of the poison. The fact that my patient, according to his own statement, had hardly eaten anything for three weeks previous to taking the poison, nor slept, must have rendered him—reduced as his system was by his debauch—still further susceptible to the action of so powerful a depressant as chloral. Drunkards will, we know, often bear large doses of chloral hydrate without inducing sleep; but, on the other hand, there are several authenticated cases of delirium tremens where death has ensued from ordinary doses of the drug.[b] Naphey, in his "Medical Therapeutics," quoted by Kane, says:—"It has been shown, beyond reasonable doubt, by Dr. Madison Marsh, of Louisiana, and later by Dr. Ernest Magnan, of Paris, that drunkards do not bear chloral at all well.

[a] Loc. cit.

[b] Kane. Loc cit.

Its use by them, even in moderate doses, is liable to be followed by sudden death." On the other hand, according to Boehm, in his article on Chloral Poisoning in "Ziemssen's Cyclopædia" (Vol. XVII., p. 449), alcoholism and frequent indulgence in the use of stimulants greatly hinder the effects of chloral. Personally I have not seen any bad effects follow its medicinal use; but in cases in which there is weak cardiac action, or any pulmonary affection, I am in the habit of giving digitalis with the chloral, with the object of counteracting—in such cases especially—its depressant action on the circulation.

ART. XVI.—*Urari as a Remedial Agent in Tetanus.* By LESLIE MATURIN, L.K.Q.C.P.I.; Physician to Kilmainham Fever Hospital.

WITHIN the past few years considerable progress has been effected in the treatment of nervous affections, based in some instances upon our extended knowledge of their pathology, and in others, where their anatomical origin is unknown or obscure, by the empiric exhibition of certain remedies which experience alone proves to be possessed of specific effects. The treatment of tetanus, however, is an exception. Numerous medicines have been extolled, and lately surgical procedures adopted, but the results have been in the majority of cases disappointing. The great number of proposed remedies bears in itself sad witness to their inefficacy, and having tested them all, we are still obliged to confess that science has not yet discovered any specific for this terrible malady. Certain cases, particularly chronic ones, recover, and might probably recover without any treatment, and the recoveries are attributed to the remedies adopted; but similar medication resorted to by others, though carried out in every detail, or even in the hands of its originators, has not on subsequent occasions verified their expectations.

I feel impelled to publish the annexed observations on a case of tetanus treated by the hypodermic injection of urari on the following grounds. We are almost unacquainted with the effects of urari upon the human subject. We are in complete ignorance to what extent the drug may be safely administered, or in what doses, short of toxic ones, it may exhibit a therapeutic action. Its well-known properties as an acinetic peculiarly suggest its administration in this disease. Lastly, the notorious fatality and terrible

suffering induced by tetanus fully warrant its exhibition, even were the certainty of benefit disproportionate to the risk incidental to the administration of so dangerous a remedy.

And here I may remark upon the inconsistence of a legislation which is attempting to stifle science by its maudlin and arbitrary enactments. I had wished to test the action of the drug upon one of the larger animals, but not possessing the necessary qualification I elected, rather than abandon its exhibition when indicated, to test its effects in tentative doses upon the human subject, as a humane (?) legislature prevented my doing so upon an animal, doomed to die a few hours subsequently by the slaughterer's pole-axe. I do not know if by so doing I may not have laid myself open to a charge of manslaughter, had the patient succumbed to the drug or the disease, or whether, as a still further check to medical advancement, an enactment may not yet be framed for the prevention of cruelty to the human animal.

My experience of tetanus has been an extended and a melancholy one. In civil hospital practice I have seen three cases—one idiopathic, two traumatic. All three terminated fatally. They were treated with Calabar bean. During the Russo-Turkish war, 1877–78, over sixty cases of acute traumatic tetanus were treated by me and my colleagues, and every case proved fatal. It mainly supervened upon gunshot injuries, and eminently in cases of congelation of the feet, which were of terrible frequency among the unbooted Turkish soldiery during the inclemency of a Bulgarian winter, against which in the exigencies of war they were wholly unprovided. We employed most of the recognised remedies—morphia, chloral hydrate, Calabar bean, camphor, &c. I confess to having never used nicotine, as it was not available. The prolonged inhalation of chloroform seemed the best palliative; it abated the fearful sufferings and perhaps prolonged life, but was in no single instance curative. In one case I performed Chopart's amputation for tetanus supervening upon extensive destruction of the soft tissues of the foot from extreme cold. I operated early in the disease, in despair of other treatment. The spasms were not diminished in force or frequency, the patient dying of exhaustion forty-five hours subsequent to the operation, and all I can say in favour of this procedure is that it seemed to hasten the fatal issue. At times tetanus seemed to be almost epidemic. The most trifling injuries, the smallest operations were almost certain to be complicated with it—so much so that except when imperative, we forbore

performing any operation. The hygienic surroundings, ventilation excepted, were very bad, the weather was intensely cold, the tent hospitals in which the wounded lay were greatly overcrowded, and there were no alcoholic stimulants, a poor sort of native red wine excepted. A warm and equable temperature, quiet, and all the other essentials to the treatment of this disease in civil practice there were none, and these circumstances of course militated against a favourable issue. There were, however, none of the terrible outbreaks of hospital gangrene, so indicative of overcrowding and general unhealthy surroundings, which were experienced by military surgeons in the wars of the last century, carbolic and other antiseptics being very freely used.

Urari, or as it may perhaps be better known by its synonymes curara, woorara, wourali, and ticunias, appears to be a combination of vegetable drugs, used by the Indians of tropical America for the purpose of poisoning their arrows. That portion of the compound upon which its poisonous principal evidently depends is the juice of the strychnos vine, of which two species are used, which belongs to the natural order of Loganiaceæ and the sub-family of Strychniæ (Jussieu). It is prepared for use by mixing it with pepper, coque-du-levant (Anamirta cocculus), and other acrid plants.[a] The quality of urari is variable, but the poisonous principle is permanent even when exposed to the atmosphere for a long time. I am informed that the South American Indians, who mix the drug with a glutinous substance to cause its adherence to the points of their arrows, manufacture a large number at once, clearly indicating that the poison is not rendered inert by time, and that it retains its activity when scraped off the arrows which have been imported into this country. When taken internally urari possesses no poisonous properties, differing in this respect from the strychnos tieuté, a decoction of which, called tjettek, is used by the Javanese for a similar purpose, and in its permanency, from the juice of the upas with which the natives of Borneo poison their arrows, and which retains its active properties for only a few hours. The urarised arrows, or, more properly speaking, darts, are very slender, unfeathered, about ten inches in length, and are blown from a hollow reed about five or six feet long. They are principally used in hunting, the barbed heads being fitted into a socket in the point, this arrangement being adopted so that, in the event of the shaft being broken or shaken off by the wounded animal, the

[a] Traité Générale de Botanique. Par MM. Emm. La Maout et Decaisne.

barbed point remains in the wound, the shaft being subsequently fitted with another head. The Bornean natives and Javanese also impel their arrows from a reed. The Bosjesmans of Southern Africa lethalise their arrow heads with the secretion of the poison glands of the puff-adder and cerastes, and also with the larva of a small beetle called N'gwa by the natives, of which Livingstone gives a very graphic description. Their arrows are shot from bows, both bow and arrows being very slender. The Malayan kris or dagger is said to be poisoned by being plunged into a decomposed human body or into the stem of the pine-apple. The knife is fluted by the action of acids to retain this rather uncertain poison in its grooves.

The medicinal employment of urari is not novel. So far back as 1856 M. Vella administered it at Turin in three cases of acute traumatic tetanus supervening respectively four, five, and three days upon operation for gunshot injuries.[a] The first two cases terminated fatally; the third recovered, the spasms ceasing upon the twelfth day subsequent to its administration. He employed it locally in the form of compresses to the wounded part, of the strength of two grains to the ounce, increased to twenty grains to nearly three ounces. It produced no irritation. M. Chassaignac, in 1859, used it in a similar case, of a strength of 20 centigrammes in 120 grammes of fluid, as a lotion applied to the wound by plugs of lint renewed every two hours. He also administered it internally in the same case, ten centigrammes in one hundred grammes of liquid, one drachm every two hours.[b] He was evidently unaware of its inertness when taken by the mouth. M. Follin at the Hôpital Necker exhibited it hypodermically without success in a case of traumatic tetanus occurring on the eighth day, ten drops of a solution of one part in one hundred, increased to twenty-four drops, being injected every half hour. He says its administration was productive of no benefit.[c] Gerhardt states that fifty per cent. of adult cases treated by urari recover, but he gives no statistics of the numbers treated, nor whether they were acute or chronic cases. If this be so, and if his percentage is framed upon a large number of cases, the outlook is hopeful for the employment of the drug in this country. He fixes the dose at from one-half to one-third of a grain in children. On the other hand, Demme regulates

[a] Medical Times and Gazette. Vol. XIX., page 343.
[b] Medical Times and Gazette. Vol. XIX., page 414.
[c] Medical Times and Gazette. Vol. XIX., page 563.

the quantity at from one-tenth to one-fifth of a grain in adults. Niemeyer recommends larger doses, ranging from one-eighth to one grain and a half.[a] It has been proposed, to ensure a more uniform strength, to inject the active principal, curarina, but I am not aware of any recorded instance of its adoption.

Urari has been used on more than one occasion in England in the treatment of nervous affections. Mr. Alfred Simson and Dr. D. Drummond have adverted to its employment in 1878.[b] I find a case reported in which it was injected to the amount of two-fifths of a grain for several days in succession in a case of chorea with an apparently curative result. At Manchester in 1878 it was injected in a case of hydrophobia without success. Four doses of one-fourth of a grain each were injected in ten hours. In 1876 Mr. Arthur E. Durham injected it in doses from three-hundredth to one-hundredth of a grain at intervals of two hours for seven days in a case of traumatic tetanus admitted into Guy's Hospital.[c] The patient, a boy of fourteen years, recovered, but other treatment—morphia, eserine, and conium—was also combined, so that it is difficult to ascribe the successful result to the action of urari alone. The case was also a chronic one, not occurring until twenty days from the receipt of injury, such recoveries being by no means infrequent. I believe the drug may be used in much larger quantities than has been adopted in these cases. Children may be more, but are in all probability less, tolerant of the poison than adults; and with the former Gerhardt fixes the doses at from one-half to one-third of a grain. As may be seen by the appended case, however, a more marked diminution of the spasms followed the exhibition of small than of larger doses, the former being repeated at shorter intervals.

The action of urari is transitory, and seems to be exercised upon the motor nerves only, the sensory remaining unaffected. When pushed to its toxic extent, paralysis of the voluntary muscular system follows, and death ensues from paralysis of the respiratory muscles. I well remember assisting at an experiment, in which I sustained the action of the heart in a rabbit for nearly two hours by artificial respiration by means of a tube tied into the trachea. In tetanus the voluntary muscles are violently convulsed; they

[a] Textbook of Practical Medicine. Vol. II., page 353.

[b] The Lancet, May 25, 1878, page 776. British Medical Journal, June 15, 1878, page 857.

[c] Medical Times and Gazette. March 31st, 1877.

are in a true state of cinesia, resembling that artificially produced by strychnia. Is it not rational to infer that an agent which induces an opposite condition—that of acinesia—should be antagonistic to it? May it not be possible to induce a partial acinesia, to diminish the excitability of the spinal cord by urari, without pushing it to the extent of producing paralysis; or perhaps even justifiable if, by establishing that condition, we might overcome this hyper-irritability of the cord, knowing that in artificial respiration we might still hold the reins of life in our hands? Might we not, perhaps, adopt this ultra treatment as a *dernier ressort*, where a certain and terrible death stares the sufferer in the face?

J. C., dairyman, aged seventeen years, was admitted into Kilmainham Fever Hospital under my care, 27th November, 1881, suffering from a rather mild attack of acute articular rheumatism. He was a well-nourished healthy boy, of sober habits, living much in the open air of the country, his business being to milk the cows and drive the milk-cart in and out of town morning and evening. I put him on 15-grain doses of salicylate of soda every two hours, and the affected joints—the knee of one side and both ankles—were enveloped in cotton-wool and gutta-percha tissue. On the morning of the 29th of November he complained of stiffness in the jaws and neck, the former of which I attributed to the maxillary articulation becoming affected. On the morning of the 30th, when going round the hospital I was struck by the appearance of his face. The forehead and eyebrows were corrugated, and the angles of the mouth retracted, and on requesting him to open his mouth, the effort to do so produced a most characteristic tetanic grin. The head was drawn back, the sterno-mastoid and muscles of the back of the neck were very tense, and on placing my hand on his knee a spasm ensued, which left no doubt as to the nature of the case. Upon examination I found an abrasion about the size of a florin on the dorsum of the left foot, a little below the bend of the ankle; it was covered with a dry crust, on lifting up which a small quantity of pus exuded, and a raw granulating surface was exposed. He said he had been dancing hard two nights previous to admission, and that a new boot which was too tight had blistered him. While examining him another spasm occurred. He was perspiring profusely, and the knee and ankles were slightly swollen, but he said the pain was much diminished. I had him immediately removed into a small carpeted ward, by himself; a strong light was excluded, and a uniform temperature of 65° Fahr. maintained throughout the entire treatment. The salicylate of soda was discontinued in the evening, as he made no complaint of pain in the joints; the pharmacopœial enema of assafœtida was

administered, and an ice-bag applied along the course of the spine. During the day the spasms became very frequent. He took his food well, and his spirits were good. At 12 o'clock p.m. I administered a hypodermic injection of one-twentieth of a grain of urari.

1st December.—Passed a very restless night. The body was bathed in perspiration, the jaws tightly clenched, strongly marked opisthotonos, the head retracted, and the back being curved until the spine of the scapula was approximated to within fourteen inches of the nates. This condition was tonic, with no remissions, the trunk being as rigid as a block of wood; the risus sardonicus and corrugation of the facial muscles were very typical. The muscles of the abdomen (the recti especially) were very tense and hard, and during the spasms—owing to their greatly extended condition, induced by the opisthotonos—I was in great apprehension of their becoming ruptured. The diaphragm and laryngeal muscles did not seem affected, and his breathing was regular. The toes of both feet were strongly extended, the extensor tendons being very tense. His agony was most painful to witness. He lay upon his side with a pillow in the hollow of his back for support, and he earnestly begged to be changed from side to side every three or four minutes, each change inducing a spasm. The sweating during the day was profuse. He took his food and eight ounces of wine, deglutition being performed slowly and with difficulty. I ordered the frequent change of position to be discontinued, on account of the spasms set up by it. The tongue was much bitten, and the odour of the breath very offensive, from the retained blood, saliva, and particles of food. Ordered a gargle of chlorate of potassium. During the day the spasms were very frequent; from 7 to 12 o'clock p.m. he had 38—equivalent to 8 in the hour, or about 1 every 7 minutes. Morning temperature, 98·3° Fahr.; evening, 99·6° Fahr. At four o'clock a.m. I administered $\frac{1}{10}$ grain of urari; at 10 a.m. and at 2, 6, and 11 o'clock p.m. $\frac{3}{20}$ grain on each occasion. The introduction of the needle at no time during the entire case produced a spasm.

2nd.—Dozed during the night, in the intervals of the spasms. Opisthotonos as marked as on preceding day; still sweating freely. Ordered soap and water enema, which acted well; complained less of pain in the back; breathing natural. At 3 30, 9 30 o'clock a.m., 1 30 and 5 30 o'clock p.m. $\frac{3}{20}$ gr., and at 12 o'clock p.m. $\frac{1}{5}$ gr. urari injected. 140 spasms during the 24 hours—equivalent to about 6 every hour, or 1 in every 10 minutes. Morning temperature, 99·4°; evening, 99·5° Fahr.; wine increased to 12 ounces.

3rd.—Rigidity of the jaws, abdominal muscles, and opisthotonos still extreme; sweating less; deglutition easier; breathing natural. At 4 and 9 o'clock a.m. $\frac{1}{5}$ gr., at 2 o'clock p.m. $\frac{3}{10}$ gr., and at 12 o'clock p.m. $\frac{1}{2}$ gr. urari was injected. At the latter hour I also injected $\frac{1}{2}$ gr. of

morphia, as he was very restless and complaining much of want of sleep. He had 90 spasms during the 24 hours, or about 1 in every 15 minutes. Morning temperature, 99·2°; evening, 99·5° Fahr.

4th.—Opisthotonos less; 16 inches between the shoulder-blades and nates; abdominal, neck, and jaw muscles not diminished in tension. Tetanic grin and facial corrugation much less marked. Said he was much easier, and slept well during the intervals of the spasms, of which during the day he had 83, much less violent and of shorter duration than those of preceding day. At 10 o'clock a.m., 2 and 10 clock p.m. $\frac{1}{2}$ gr. urari was injected, and $\frac{1}{2}$ gr. morphia at 12 o'clock p.m.; wine increased to 16 ounces. Morning temperature, 98·8°; evening 99° Fahr.

5th.—Could separate the teeth about half an inch; opisthotonos diminished to seventeen inches between the scapulæ and nates; abdominal and neck muscles, and extensors of toes less tense; complained of colicky pains in abdomen. Ordered enema of castor-oil and turpentine, and draught of chloric ether and tincture of opium. At 5 and 11 o'clock a.m., and 5 and 11 o'clock p.m., $\frac{1}{2}$ grain urari injected upon each occasion; 46 spasms during 24 hours, feebler and shorter than those of preceding day, equivalent to 2 in the hour. Morning temperature, 98·8°; evening, 99·4° Fahr.

6th.—Muscular tension about similar to preceding day; spasms very weak and brief; sweating ceased; expression of face almost natural; could separate jaws nearly an inch; distance between shoulder-blades and nates, nineteen inches; experienced great relief from lying on the back, with an air cushion in the dorsal concavity. At 6 a.m., 12 o'clock noon, 6 and 12 o'clock p.m., $\frac{5}{8}$ grain urari injected on each occasion. Had 34 spasms during 24 hours, or about 3 every 2 hours, or 1 every 40 minutes. Morning temperature, 98·8°; evening, 99° Fahr.

7th.—$\frac{3}{4}$ grain urari was injected at 6 a.m., 12 o'clock noon, 6 and 12 o'clock p.m.; 14 spasms, or about 1 in every 2 hours during 24 hours, 20 less than preceding day, feeble, and of short duration. Morning temperature, 98·8°; evening, 99° Fahr.

8th, 9th, 10th, and 11th.—1 grain of urari injected at 6 a.m., 12 o'clock noon, 6 and 12 o'clock p.m. each day. On the 8th, 4 spasms, or 1 in every 6 hours occurred, 10 less than on the preceding day; on the 9th, 2 spasms, or 1 in every 12 hours, 2 less than on the preceding day; on the 10th, 3 spasms, or 1 in every 8 hours, 1 more than on the preceding day; and on the 11th, no spasms occurred. No urari was injected after this date, nor did any more spasms occur. The muscles of the back and jaws gradually relaxed. On the 14th they had regained their normal condition, and on the 18th he was up, and able to sit in an arm-chair at the fire. The muscles continued stiff and weak for a long time, and the patient was discharged from hospital on the 22nd of January, 1882.

The urine was diminished rather than increased in quantity during the continuance of the spasms. The diminution may be accounted for by the copious diaphoresis. The specific gravity throughout was 1032—a low one perhaps, considering the increased tissue waste which probably coexists with the violent muscular action. The patient also consumed a considerable quantity of nitrogenous food—from four to six pints of strong beef-tea or chicken broth in the twenty-four hours. Unfortunately, the quantity of urea excreted in the perspiration and urine was not computed, but considering the specific gravity of the urine, it could not, in it at least, have been greatly increased, and in all probability must have been diminished in the increased diuresis during convalescence. If urea, as was formerly believed, be the correlate of muscular waste, and if this waste be proportionate to muscular action, under what condition would it be more likely to be increased than during violent tetanic contraction? Regarding, however, the low specific gravity of the urine, it does not seem to be in any way affected by it.

I may mention a circumstance in connexion with this case not referred to, as far as I am aware, by any writer on tetanus. Shortly succeeding the cessation of the spasms, the patient voided large quantities of colourless or pale straw-coloured urine of a low specific gravity. From the 12th to the 16th December inclusive, 1,008 ounces were passed—viz., on the 12th, 13th, and 14th, 204, 200, and 194 ounces respectively, of a specific gravity of 1014; on the 15th 180 ounces, specific gravity 1016; and on the 16th 150 ounces, specific gravity 1018. On the 16th the quantity was reduced to 80 ounces, and on the 17th to 60 ounces, specific gravity 1032, and of normal colour. Viewed in relation to other spasmodic affections, as hysterical and epileptic convulsions, the paroxysms in the former of which frequently simulate tetanic spasms, accompanied by opisthotonos, &c., and to which a similar diuresis, the urina spastica, frequently succeeds, this circumstance is worthy of notice. Is tetanus in any way allied to these two named affections, or is the diuresis due to a paralytic dilatation of the renal vessels consequent upon the urari, or simple derangement of innervation irrespective of it? I may also observe that the spasms ceased upon the twelfth day, corresponding in this respect with the successful case of M. Vella referred to.

ST. MARY'S HOSPITAL RADFORD LIBRARY MANCHESTER

TABLE—*Showing the Temperature, Pulse, number of Injections, and quantity of Curara Injected, and the number and frequency of the Spasms, with their comparative Decrease or Increase, from the first Injection on the 30th of November to the complete cessation of the Spasms on the 11th of December.*

Date	Temperature Fahr.		Pulse		Number of Injections	Quantity of Curara injected in the 24 hours	Number of spasms in the 24 hours	Frequency	Decrease or excess of spasms as contrasted with preceding day
	Morning	Evening	Morning	Evening					
	°	°							
Nov. 30	99·5	100·0	78	66	1	$\frac{1}{20}$ grain	—	Every 4 or 5 minutes. Number not registered	—
Dec. 1	98·3	99·6	72	90	5	$\frac{7}{10}$ grain	38 from 7 to 12 p.m.	8 in the hour, or about 1 every 7 minutes	—
„ 2	99·4	99·5	108	96	5	$\frac{4}{5}$ grain	140	6 in the hour, or 1 in 10 minutes -	—
„ 3	99·2	99·5	84	96	4	$1\frac{1}{5}$ grain	90	About 4 in the hour, or 1 in 15 minutes	50 less.
„ 4	98·8	99·0	78	90	3	$1\frac{1}{2}$ grain	83	About 7 in 2 hours, or about 1 in 20 minutes	7 less.
„ 5	98·8	99·4	66	90	4	2 grains	46	2 in the hour - - - - -	37 less.
„ 6	98·8	99·0	84	84	4	$2\frac{1}{2}$ grains	34	About 3 in 2 hours, or 1 in 40 minutes	12 less.
„ 7	98·8	99·0	84	90	4	3 grains	14	About 1 in every 2 hours - - -	20 less.
„ 8	98·6	99·0	84	90	4	4 grains	4	1 in every 6 hours - - - -	10 less.
„ 9	98·4	98·8	78	86	4	4 grains	2	1 in every 12 hours - - - -	2 less.
„ 10	98·4	98·7	78	82	4	4 grains	3	1 in every 8 hours - - - -	1 more.
„ 11	98·4	98·6	72	80	4	4 grains	—	——	—
„ 12	98·4	—	72	74	—	—	—	——	—
Total, -	—	—	—	—	46	$27\frac{3}{4}$ grains	454		

The immediate results of an injection were, in some instances, a diminution of the spasms, as compared with those of the preceding hour—*i.e.*, the period at which the action of the drug is affirmed by Demme to be exhausted, and the spasms presumably to become increased numerically and otherwise. In others the results were equivocal, while in some instances the spasms were in excess. For instance, on the 2nd December, after the injection of $\frac{3}{20}$ grain at 3 30 and 9 30 o'clock a.m., and at 1 30 o'clock p.m., the spasms were, for the hour succeeding the injection, 3, 3, 3, as against 7, 8, 11 of the preceding hours respectively. At 9 o'clock a.m. on the 3rd December, after the administration of $\frac{1}{5}$ grain, and at 12 p.m. of $\frac{1}{2}$ grain, the spasms were, for the succeeding hour, 2 and 2 against 6 and 7 of the previous hour respectively. On the other hand, on the 4th and 5th December, on the injection of $\frac{1}{2}$ grain, and on the 6th December of $\frac{5}{8}$ grain, the spasms for the succeeding hour were 9, 13, and 3, as against 5, 6, and 0 of the preceding hour respectively. In several instances the spasms did not appear to be affected numerically. During the whole interval of the injections the spasms were, in most cases, numerically diminished, as compared with the preceding interval. Their abatement in violence was most apparent in the daily comparison. The most marked numerical diminution seemed to follow the exhibition of the smaller doses, $\frac{3}{20}$ to $\frac{1}{5}$ grain, at short intervals, rather than the larger, $\frac{1}{2}$ to 1 grain, less frequently repeated. In the lower animals urari is rapidly absorbed, and exhibits its toxic effect a few minutes subsequent to its administration. From this we might infer that if, as Demme affirms, its effect is prolonged for only four or five hours, its acinetic action in tetanus would manifest itself quickly after injection, but it does not seem to be always the case. M. Cl. Bernard declares that its action is infinitely less marked in the mutilated and suffering animal than in the healthy and strong.

It will be observed in this case, the symptoms of which were unusually severe, that the temperature for the most part but slightly deviated from the normal, the thermometer on one occasion only, at the onset of the attack, registering 100° Fahr. This latter fact is interesting, considering the greatly increased calorification engendered by the tetanic condition of the muscles, which we may reasonably suppose to be in direct ratio to the frequency and violence of the muscular contraction, cases having been recorded in which the thermometer has registered 110° Fahr.

From the foregoing observations we may rationally assume,

firstly, that in this case, no other treatment having been adopted or combined, urari seems to exercise a specific action in diminishing the frequency and violence of the tetanic spasms; secondly, that its acinetic properties are not always *immediately* developed upon its absorption, being more marked by comparison of its daily effects than by that of shorter intervals; thirdly, that it is not a cumulative, a sufficiency—nearly half a drachm—having been injected during a period of eleven days to produce a fatal effect, were it so; fourthly, that four grains may, in an adult, be exhibited at intervals in the twenty-four hours without danger to life.

The drug was first employed in the form of discs prepared by Messrs. Savory and Moore, and subsequently as an aqueous solution, prepared by myself, of the commercial urari procured for me by Messrs. Thacker and Hoffe, of this city.

ANTISEPTIC SUTURE OF THE PATELLA.

Pfeil Schneider (*Arch. für klin. Chirurgie*, XXVI., p. 286) details a case of a fractured patella in a man thirty-five years old, which he treated with antiseptic sutures twenty-four hours after the injury. The result was complete recovery in forty-four days after the accident, with entire use of the knee from that day on. The author found in literature nine similar cases of subcutaneous fracture of the patella in which the antiseptic suture was applied. A more exact analysis showed that the operation had been performed five times in old cases, and the other cases were in recent fractures (one refracture). No patient died. Six cases recovered without any reaction locally or generally having been noted. In one case the temperature went up to 103°; twice suppuration of the joint occurred. Bony union of the fragments was observed certainly eight times, and once probably (case of Lister). In the tenth case union was established by means of a short ligament (Cameron). In eight cases the joint remained movable; in the other two ankylosis was present before the operation. After mentioning the very favourable results obtained in such fractures in the pre-antiseptic period, the author arrives at the following conclusions:—Antiseptic sutures in subcutaneous fracture of the patella is admissible, and is really benign in comparison to many operations that are carried out now-a-days with antiseptic precautions. He insists that strong sutures be used, and be allowed to remain untouched. The after-treatment consists in restitution of the knee-joint; on this account, in favourable cases, patients must not remain more than two or three weeks in bed.—*Atlanta Medical Register*, Feb., 1882.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Science and Art of Midwifery. By WILLIAM THOMPSON LUSK, A.M., M.D. London: H. K. Lewis. 1882. Pp. 687.

THIS book bears evidence on every page of being the result of patient and laborious research and great personal experience, united and harmonised by the true critical or scientific spirit. The author's object in writing it has been—"To present to the reader a fair statement of the changes which have been made by modern investigation in the views entertained respecting the physiology and pathology of pregnancy, labour, and childbed;" and "to show that with advancing knowledge the art of midwifery has ceased to rest upon empirical rules, and is already, with rare exceptions, the natural outcome of scientific principles." We can hardly give the book greater praise than to say that we think the author has accomplished this object, and we are convinced that the book will raise the general standard of obstetric knowledge both in his own country and in this.

To anyone at all familiar with modern physiological and obstetric literature it will not be a matter of surprise to find that this work is founded on recent German investigation and research, nine-tenths of the authorities referred to being of that nationality. Our author has felt this fact so acutely that he half apologises for it in his preface. The way he does so is at once so ingenious, and, at the same time, opens up such an important question of medical politics, that we cannot refrain from quoting his words:—"If," he says, "I have given special prominence to the labours of German investigators, it has not been due to a lack of appreciation of valuable contributions from other foreign and home sources, but because, with large hospitals and *with State encouragement*, the obstetrical writers of Germany have of late years occupied a vantage ground of which, to their credit, they have been prompt to avail themselves." That such should be true is undoubtedly humiliating, but if the causes put forward by Dr. Lusk for the present German pre-eminence are the true ones, of which we are not quite sure, we ought to have the remedy for it in our own hands.

The general arrangement of the book differs entirely from what we have been accustomed to, an effort being made to consider separately the physiology of pregnancy, labour, and the puerperal state, from the pathology. This object the author has not carried out quite strictly, but we look upon the effort as being a great improvement in method, as tending to draw the line clearly between the normal and abnormal, while at the same time showing us how imperfect is our knowledge of many of the physiological questions involved. Obstetric operations are considered as a sort of introduction to the pathology of labour.

The introductory chapters, on the physiological anatomy of the generative organs and on the development of the ovum, are much fuller than is usual in works on midwifery, and leave little to be desired. When considering the physiology of pregnancy the author discusses at length the changes which it produces in the cervix uteri. The cervix uteri, instead of being shortened during pregnancy, partakes, he says, in the general hypertrophy of the rest of the uterus. The apparent shortening is due in part to the softening and swelling of the tissues that accompany pregnancy, but more especially to the pressure exerted on the cervix by the head. Indeed it varies in amount according as the latter occupies the pelvis or is above the brim—being quite absent in these latter cases; while in the former, "by pushing the head away from the cervix, or by placing the patient in the knee-elbow position, so as to allow the head to recede, the anterior lip resumes its normal dimensions."

As to the uterine souffle, he thinks the generally accepted belief now is that it is produced in the ascending branches of the arteria uterina, and that a vibratory thrill can be felt, when pressure is made along the course of the artery, corresponding to the sound heard in auscultation.

While considering the physiology of labour he draws attention to the increasing difference there is, as labour advances, between the thickness of the fundus and of the cervical zone. Bandl first directed attention to this thinned condition of the lower uterine segment, and the line, where it meets and unites with the thickened fundus, can sometimes be made out, about a hand's breadth above the symphysis pubis, as a thick band, which is known on the Continent as the "ring of Bandl."

He also discusses very fully the effects, on the fœtal circulation, of early or late tying of the cord, as shown by the investigations of Budin, Schücking, Hofmeier, Ribemont, and Zweifel, a full account

of which the reader will find in the "Report on Midwifery" in *The Dublin Journal of Medical Science* for June, 1879.

The chapters on the mechanism of labour commence with a very exhaustive description of the anatomy of the pelvis, and the author has spared no pains to make the subject—at all times a most complicated and difficult one—plain to the reader. But we confess this is the part of the book where, we think, he shows to least advantage. Nor do we think it possible ever to give a satisfactory explanation of this subject, as long as the ischial spines and the anterior and posterior inclined planes are supposed to have one action in occipito-anterior positions, and exactly the contrary action in occipito-posterior ones.

The chapters devoted to obstetric operations are clear and concise, and are evidently the work of one who himself possesses that natural mechanical ability without which no one can ever be a first-rate obstetric practitioner.

It is, however, in the chapters on the deformities of the pelvis that our author is seen at his best, and we regret that space will not permit us to do more than notice one or two points of practical importance which they contain. Thus, when speaking of the treatment of labour in contracted pelvis, he fixes the limit at which the Cæsarean section, or laparo-elytrotomy, is indicated at 2·5 inches. He does not, however, recommend the latter operation when the uterus is rigidly applied to the child, and the cervix is undilated. The advantage of inducing premature labour when the pelvis measures less than 2 75 inches, is very questionable. Between 2·75 and 3 inches it lessens the trauma to the mother, and gives a chance of saving the child. It should not be induced when the pelvis measures 3·5 inches or more. Version, combined with expression of the head, has given some excellent results in the hands of some operators in pelves measuring from 2·75 to 3 inches, but their results are greatly modified by the statistics of Borinsk, which, in 93 cases of version in contracted pelves, give a maternal mortality of over 16 per cent., and a fœtal mortality of more than 63 per cent. Version and forceps are not rival operations while the head is above the brim; for, under these conditions, the forceps is hardly less dangerous than the Cæsarean section. The results of the expectant method of treatment are, however, the most encouraging, for the statistics of three large hospitals give 407 spontaneous deliveries in cases of contracted pelvis, with a loss of 53 children and 12 mothers, the latter representing very nearly

the ordinary mortality in lying-in hospitals. The success of this method depends greatly on the continuance of strong pains, and on the presentation being favourable. If the pains become weak, and the head has not become fixed in the brim, we may endeavour to turn. If we fail in this, and the lower segment of the uterus does not show signs of having been injured by pressure, we may try and extract with the forceps. If the cervix is, however, swollen and œdematous, with fœtal heart-sounds feeble, we should perforate. The author has succeeded with a straight forceps when the head was high in the pelvis, after the double-curved instrument had failed. This, he thinks, is owing to the difficulty there is with the latter instrument in making the traction accurately in the axis of the brim. In such cases he now uses Tarnier's forceps, and thinks that "a few trials will convince the most prejudiced opponent of Tarnier's forceps that it will at the superior strait bring the head to the floor of the pelvis in much less time, and with a less expenditure of force, than can be accomplished by other methods."

If the membranes rupture early, his first preference, just after rupture, is Barnes' bags; but if the waters have escaped for some time, he thinks the best treatment is to apply Taylor's thin-bladed forceps through the small os, and by alternate traction and relaxation cause the head to descend, and itself dilate the os.

As to the ætiology of rupture of the uterus, the author, while not overlooking rupture from actual rubbing through, adopts the theory of Bandl for the large majority of cases. This, briefly stated, is as follows:—During the course of every labour there is a constant increase in the thickness of the muscular wall of the uterus, at the fundus, and a corresponding decrease in the thickness of the cervical zone. If now, from any cause, the presentation is prevented entering the pelvis, the strong fundal portion of the uterus draws the thinner cervical portion more and more upwards, until a point of stretching is reached which the tissues can no longer bear, and rupture takes place in the lower thinned segment. As a symptom of threatened rupture, he mentions being able to make out very plainly the line of junction of the thick and thin portions of the uterus (the ring of Bandl) by abdominal palpation. Once the rupture has occurred, he recommends in some cases gastrotomy, the statistics of which, collected by Trask, Joly, and Harris, give 53 per cent. of recoveries. He also mentions with favour the method of treatment, by drainage and injection of the

abdominal cavity, recently introduced by Frommel, for which see *The Dublin Journal of Medical Science* for November, 1880.

In the classification of puerperal fever he follows Spiegelberg's division:—

1. Inflammation of the genital mucous membrane—endocolpitis and endometritis. (*a*) Superficial. (*b*) Ulcerative (diphtheritic).

2. Inflammation of the uterine parenchyma and of the subserous and pelvic cellular tissue. (*a*) Exudation circumscribed. (*b*) Phlegmonous, diffused, with lymphangeiitis and pyæmia (lymphatic form of peritonitis).

3. Inflammation of the peritoneum covering the uterus and its appendages—pelvic peritonitis and diffused peritonitis.

4. Phlebitis uterina and para-uterina, with formation of thrombi, embolism, and pyæmia.

5. Pure septicæmia—putrid absorption.

He considers that there is now abundant evidence to show that the infectious diseases of childbirth are of septic origin, but thinks "that the zymotic fevers may provoke in the puerperal woman the various inflammatory lesions that are commonly associated with puerperal fever." The question of the identity of puerperal fever and septicæmia is, he thinks, largely one of definition. He enters very fully into the question of the relation that bacteria bear to septicæmia, holding himself that they are cause and effect, "though whether they operate mechanically, or whether they produce a virus in the process of nutritive activity, or whether, as is probable, both suppositions be correct," are questions that must be decided by future investigations. He thinks it still an open question whether the diphtheritic patches on the genital organs are identical with those that appear in the throat—morphologically they are so; but throat diphtheria has not been noticed as associated with epidemics of puerperal diphtheritis. That erysipelas is very closely connected with puerperal fever has long been acknowledged, and recent investigations go far to prove this relation. "Thus we find in surgical fever, in puerperal fever, in diphtheria, and in erysipelas, the presence of a common element (bacteria) which links them together, and which establishes the relationship which has long been recognised as existing between the various processes." This is contrary to the views held, especially with regard to diphtheria, by some distinguished authorities. As to the channels of entrance of the septic poison, he thinks the time has not yet come to give up the idea that it may, under exceptional circumstances, enter by the

respiratory and, probably, by the digestive tracts. With a view of testing Semmelweiss' theory he made inquiries from several teachers of the anatomical schools in New York, who all assured him that though they attended cases of labour during the time they acted as Demonstrators of Anatomy, they could say they had never caused puerperal fever in any of their patients. He also quotes some statistics of the Vienna Lying-in Hospital, for the year 1857, which tend to prove that the mortality there is rather less without the use of antiseptics than with them. However, when he comes to the prophylaxis of puerperal fever, he is illogical enough to be a firm believer in their efficacy. In the treatment of puerperal fever intra-uterine injections should be used with the greatest caution, and only when strictly indicated. They should be made by means of an irrigator, and not by an ordinary syringe. Pain is the indication for opium, which is, however, injurious in pyæmia. Purgatives should only be given to remove constipation, and not with the object of eliminating the poison. Fever being such a constant symptom, antipyretics are naturally of the greatest importance. Among these he gives the preference first to quinine, afterwards to salicylate of soda, Warburg's tincture, digitalis, and alcohol. The various methods of applying cold to lessen fever, including Dr. Kibbie's fever-cots, are given, and fairly criticised. The author's own experience of this method is, that it suits some cases, but produces such an amount of shock as to be very injurious to others.

Before we close this notice we may perhaps be allowed to express a patriotic regret that the author does not give the credit for the method of conducting the third stage of labour, which he himself recommends, to the Dublin School, to which, we think, it can be shown that it by right belongs; for no one can study the works of Hardy and M'Clintock, Sinclair and Johnston, or Professor Murphy, without seeing that the fact that the placenta can be forced out of the vagina by pressure on the fundus is plainly laid down in these works. Indeed these authors forbid any traction on the cord till the uterus has been excited by friction and pressure to expel the placenta into the vagina. The ordinary practice, too, of the Rotunda Hospital has for years been to use pressure over the fundus to cause the placenta to be expelled from the uterus; and the first thing tried by the assistants, when called to cases of retained placenta, is pressure over the fundus, the entry, "Placenta pressed off," being continually met with in the books of former masters.

Credé certainly deserves the credit of having made this method widely known and very generally practised; but it has been the common practice of the Dublin School (as the late Dr. M'Clintock, in his edition of "Smellie's Midwifery," put it) "from time immemorial." We agree with the author that the cord should never be pulled on till the placenta is in the vagina; but it would require very strong proof to make us believe that if traction be put too soon on the cord, the placenta may act so like an ordinary sucker as to make it impossible to deliver it "without first introducing two fingers, and hooking down the margin of the placenta, *so as to allow air to pass above into the uterine cavity.*" We were also surprised to find that the reader is referred to Schroeder for Dr. M'Clintock's statistics with regard to Hydramnion, showing, we fear, that his classical work, "Clinical Memoirs on Diseases of Women," is either unknown, or unread, by our author.

The book, which is profusely illustrated, is dedicated to Fordyce Barker, M.D., "in recognition of his eminence as a writer, teacher, and physician, and in grateful acknowledgment of his generosity towards the younger members of his profession;" and we do not think such qualities could have a more suitable tribute than the work before us, which, whether for the student obliged to learn the theoretical part of midwifery, or for the busy practitioner seeking aid in face of practical difficulties, is, in our opinion, the best modern work on Midwifery in the English language.

A Manual of Physiology. By E. D. MAPOTHER, M.D. Third Edition, by J. F. KNOTT, F.R.C.S.I. Pp. 665. Dublin: Fannin & Co. 1882.

THE original work of Dr. Mapother was formerly so well known to Irish students that of it nothing need here be said. The following observations are intended almost solely to apply to Mr. Knott's revision. The first question that strikes the reader on the most cursory inspection of the book is why the reviser did not take to himself the entire credit of the work, as with one or two exceptions every chapter has been entirely re-written. It could hardly be otherwise, as in the interval of time that has elapsed since the original appeared the science of Physiology has fared much better at the hands of its exponents. Mr. Knott's scientific indebtedness to his predecessor is but small, and, like the cuckoo, he has with his new material ousted nearly every remnant of the old. There are one or

two "survivals." We observe the second chapter, "Man's Place in the Animal Kingdom" and "Varieties of the Human Race," has been retained, with the illustrations of Sir Astley Cooper—the Bosjesman playing on the gourah, &c. We are in doubt whether it was the anatomical peculiarities of skulls (a subject on which Mr. Knott has already done good work) or the utilisation of woodcuts that saved this chapter from elision, but in subsequent parts the decimation has been satisfactory.

In his preface Mr. Knott states, both truthfully and modestly, that considerable pains have been taken in bringing together the main facts brought to light by the elaborate researches of Continental physiologists; but it was hardly fair to the chief source of his supply to add in his next sentence that the elaborations of the German workshops were too often encumbered with dross and worthless chips. "It has not," he continues, "been considered advisable to occupy the time or burden the memory of students by prolonged accounts of theories whose sand-supported foundations must soon be sapped by the rapidly advancing tide of scientific knowledge, and whose millimetrical periods of existence are usually meted out by the times which separate the publication of the consecutive numbers of Pflüger's *Archiv*."

This may be true, but its statement on the forefront betrays an animus unsympathetic with physiology. An anatomist can look for undoubted facts; an inquirer into functions and processess must be prepared for occasional variations of experiment and provisional hypotheses.

The first chapter is concerned with matter and force, and with the characteristics of living organisms. Unfortunately for the student's memory there are a great many definitions of "Life" recorded from Aristotle to Herbert Spencer. These physico-metaphysical chips might have been spared him at the threshold; while the leading distinctive characteristics of plants and animals might have been tabulated with a greater view to clearness.

To the second chapter reference has been already made.

The third, comprising about 70 pages, treats of the Chemistry of the Body. We believe this arrangement (*i.e.*, placing chemistry in the beginning of the book) to be the right one, inasmuch as to a student who knows the elements of ordinary chemistry a knowledge of animal chemistry is much more readily imparted as a short course than if given piecemeal by digressions throughout his physiological lectures. We are aware that some licensing

bodies still require their students to attend a course of lectures on Physiology in their first winter (*i.e.*, before they have learned any Anatomy or Chemistry), but to do them justice it is only the certificate they insist upon, not the attendance. Under non-nitrogenous organic compounds are the acids, alcohols, fats, but the sugars appear as two co-ordinate classes—one including glucose, dextrin, glycogen, muscle sugar; and the other, saccharoses, represented by sugar of milk. Under nitrogenous organic compounds we have acids, substances analogous to fats (the lecithin group), amides, amido-acids, ammoniacal bases, nitrogenous substances not containing oxygen (*e.g.*, skatol, which is written "scattol"), and strangely enough a whole series of simple inorganic salts—the carbonates of sodium, potassium, calcium, &c.; the last class being substances that were not included in any of the other classes. This unsymmetrical class is represented by cystin alone. The albuminous substances are divided into albumins proper and derived albuminoids. Under the first heading are comprised as distinct groups albumins, globulins, fibrin, proteins, peptones, crystalline albuminoids, and soluble ferments. Faulty as these classifications may be, it is easier to criticise than devise a succinct epitome of physiological chemistry in the space of 70 pages.

The fourth chapter is devoted to the explanation of the Cell; and the history of the cellular theory, as well as the description of the chemico-vital properties of protoplasm, is very clearly detailed. Then follows Blood—its quantity, chemical composition, corpuscular formation, &c.

The next chapter, which describes the Circulation, begins with the Heart; and the inconveniences of the combination of Histology and Physiology become apparent. Cardiac muscle is described and contrasted with involuntary and striped muscle, but these more regular and simple forms of tissue are not discussed till a hundred pages further on. If the sciences of structure and of function are to be included in the same volume, it would be really more convenient, as well as more systematic, if the former were to be put in a separate section in the front of the volume, like the chapter on Animal Chemistry. As accurate woodcuts are a necessity for a treatise on Histology, the scantiness as well as the inferior quality of those supplied in the present work make its shortcomings in this respect very apparent. We have no desire to see a book crowded with illustrations of apparatus which can only be learned by actual use in the laboratory, but it is essential for a

student's reading of minute anatomy that the descriptions of tissue should be accompanied by at least diagrammatic representations. The few woodcuts are coarse, and not particularly like their prototypes—*e.g.*, the transverse sections through the coats of vessels, on page 160, where the endothelial coat of an artery is, save for the reference, unrecognisable.

With reference to the time at which the coronary arteries receive their supply, Mr. Knott seems to adopt Brücke's view, as he lays stress upon Klug's experiment of detaching from its connexions the heart that had been brought to a stand-still in systole or diastole by stimulation of the vagus, and of instantly coagulating its blood by immersion in dilute sulphuric acid. We had thought this controversy had been almost decided, but in the opposite way. Instruments for pulse registration are numerously detailed, but the conditions which favour dicrotism, or which favour oscillation waves, are almost passed over. Amongst the causes of the dicrotic wave we miss the mention of recoil after longitudinal extension of the artery—a cause, as was shown by the late Dr. Reuben Harvey in an elaborate paper, quite sufficient to account for the phenomenon, even without the back-stroke from the closing of the semilunars. The "Stromuhr" of Ludwig is given, but neither from the letterpress nor the woodcut could a reader previously unacquainted with it learn the working of this unmanageable though ingenious instrument.

In the eighth chapter, Epithelium, the connective tissues, and muscle are very clearly described. The electrical properties of muscle, and we may add of nerve, in the next chapter, are as fully given as the difficulties of the subject will permit. For the very meagre woodcut of Helmholtz' myograph we should much have preferred one of the pendulum myographs, but there is no reference to that instrument. The up-stroke in the curve of muscular contraction is depicted much too steep for the slanting down-stroke; this, however, is a matter of small importance, as the contraction curves vary much in animals, and even in corresponding muscles of the same animal. The sub-section on Rigor Mortis would have been more valuable had the coagulation of the muscle plasma into myosin been assigned a more prominent place in the category of phenomena, instead of being merely mentioned in the concluding sentence.

The Nervous System is next taken up; and we have no hesitation in saying that this is the best part of the book. *En passant*,

the order in which the different subjects are introduced is, we believe, the proper one. It is much more convenient to reserve Digestion and Secretion till Innervation has been studied than to assume nervous influences of which the student has no knowledge, and which he must provisionally regard as *dii ex machinis*, to be looked-up afterwards. It was of course necessary, in speaking of the action of the heart and of blood-pressure, to postulate some nervous centres; but the difficulties would have been infinitely increased had not the master tissue, nerve, been taken before its servants, the secreting glands. The general phenomena of Innervation are ranged under five heads—1. Impressions and Sensations; 2. Reflex Actions; 3. Instinctive Acts; 4. Psychical Acts; 5. Inhibitory Actions. Automatic movements are considered as a variety of reflex actions which are rhythmic in succession, and of which the seat of initial stimulation is difficult to localise, while, somewhat inconsistently, instinctive acts, which are "after all but complicated automatic acts or groups of automatic acts co-ordinated for a certain end," are allotted a class by themselves. Instinct, according to the author, is but a reflex phenomenon of more complex order than the ordinary reflexes, and the co-ordination is so pronounced that acts of this kind approach psychical acts. From this standpoint it is not easy to see how the psychical can be differentiated from the superior kind of instinctive. The writer's view, however, of instinctive acts is a peculiar one, inasmuch as it reverses the process of evolution from the simple to the more complex. He holds that the initial stimulation of acts of this kind in a large proportion of cases must be central, and that the localisation of their centres must probably be placed above the automatic centres, and consequently in the higher parts of the nervous axis. He concludes—"It is very probable that the so-called instinctive actions were all originally voluntary and intelligent, and that in consequence of constant repetition and hereditary succession they end by becoming involuntary and instinctive." Yet if they are, as stated in his first premise, only reflex phenomena of complex order, then our voluntary and intelligent actions belie their name, and are themselves but the reflexes of something that determines for us.

The localisation of motor centres is carefully tabulated, and the methods and results of Hitzig, Ferrier, Goltz, &c., are well epitomised. The eye and ear have been relegated from their natural place in the category of terminal sensory organs to the end of the

ST MARY'S HOSPITAL RADFORD LIBRARY

book, and their functions have been treated in a very condensed fashion, probably from a feeling that a reader who wanted to study these subjects would look to the larger text-books for the information.

Of Digestion little need be said. On page 429 there is a very peculiar woodcut representing the origin of bile ducts. At the end there is an excellent summary of the absorptive processes in the digestive tube. It may be noticed that all through the writer styles Hydro-carbons what we are more familiar with as Carbo-hydrates—*i.e.*, the Starches, &c. On the formation of urea in the liver, only Meissner's theory (that the urea is formed at the expense of the red-blood corpuscles) is mentioned. The much more probable source—leucin and other products of pancreatic digestion—should not have been omitted. The Bowman-Heidenhain theory of the excretion of urine has hardly had justice done to it, and Nussbaum's beautiful corroborative experiments on the vessels of reptiles' kidneys have been left out.

So far, it has been the particular shortcomings of the work which have chiefly challenged our notice; but, taken as a whole, there is much reason to congratulate Mr. Knott on the result of his labours. By amassing immense material, by carefully sifting and systematically arranging it, he has succeeded in compiling a work nine-tenths his own, which as a storehouse of information is superior to any manual of its size we are acquainted with. But this very merit may, from a teacher's point of view, injure its usefulness. When a student sees a number of discordant opinions, each condensed into a few lines and ticketed with a continental name, especially when the grounds of disagreement are not stated, he is apt to distrust, not merely Pflüger's *Archiv*, but the value of scientific research. The present book inherited to a large degree this patchwork erudition. We do not in the least mean to disparage caution, but we think that in a student's manual a clear line should be drawn between what can be taught dogmatically and what can be regarded as still open to question. The large type should include only what the writer believes to be ascertained facts, with the methods by which they have been arrived at. These, as being the common property of science, may be inserted without constant reference to observers' names. The rival theories, the contradictory experiments, and the miscellaneous information, should be relegated to small print for the more advanced or more curious. It is bad enough that Physiology should be regarded as

a collection of "facts," but even worse that the facts should be of doubtful credibility.

Leprosy in British Guiana. By JOHN D. HILLIS, F.R.C.S. London: J. & A. Churchill. 1881. Pp. 264.

THIS work is, we are informed, principally intended for the use of practitioners in the West Indies, and embodies the experience which Mr. Hillis acquired as Medical Superintendent of the General Leper Asylum, British Guiana. The clinical account of leprosy is distributed under the varieties—Tuberculated lepra, Non-tuberculated lepra (Nerve-lepra), and Mixed-tuberculated lepra; and this part of the work does not call for any special comment, the descriptions given tallying with those furnished by previous writers on this disease.

The distinctive features of the book are the fine series of plates illustrating the various aspects of leprosy, and the detailed account of the morbid anatomy contributed by Mr. P. Abraham, the accomplished Curator of the Museum of the Royal College of Surgeons, Ireland. As to the excellence of the histological drawings, of which there are two plates, it is sufficient to say that they are from the pencil of Mr. E. Noble Smith.

There are twenty excellent chromo-lithographs, by Forster & Co., reproduced from original drawings and photographs of patients at the asylum, and a study of these will leave a vivid impression of the deformities, mutilations, and cutaneous affections which follow in the mournful course of true leprosy.

In Plate IV. we have an interesting coloured representation of the eruption in tuberculated lepra, occurring during a febrile exacerbation, a peculiarity being the development of numerous purplish-red patches over the front of the chest and abdomen, parts of the body which are generally free from tuberculation. Plate XIX. illustrates a case of mixed-tuberculated lepra, simulating chronic syphilis. Plate VII. represents a dissection of the ulnar, median, and radial nerves, showing the enlargements of the nerves, and the flexed atrophied condition of the fingers, together with the scars left by burns; and in Plate XVI. we have a drawing of the condition of the bones of the hand and forearm in nerve-lepra. The results of Mr. Abraham's elaborate investigations into the histology of lepra are in essential accord with those described by Virchow and the Norwegian physicians, Danielssen

and Boeck, as to tuberculated lepra, and Mr. Abraham further describes very fully the pathological changes found in the anæsthetic spots. Broadly speaking, these consist in a general fibroid degeneration, the remains of vessels, ducts, &c., occurring at rare intervals throughout the mass.

For the more minute histological details we must refer those interested to the work itself, which is creditable to Mr. Hillis, who bespeaks indulgence for defects in a work written under the pressure of a large general practice, and in a depressing tropical climate, and far removed from libraries and books of reference. As to treatment we must acknowledge that the evidence as to the curability of true leprosy appears very unsatisfactory, but it seems that considerable amelioration of the symptoms, and possibly a retardation of the disease may be accredited to the use of gurjun oil.

An Atlas of Illustrations of Pathology. New Sydenham Society. Fasciculus III. Diseases of the Liver (Plates XI. to XVI.). London: H. K. Lewis. 1880.

It will be remembered that the first two fasciculi of the Society's Atlas dealt with diseases of the kidneys, spleen, and adrenals. Upon a similar plan, the third and fourth fasciculi will include coloured drawings of the diseases of the liver, and will contain illustrations of the morbid histology, as well as a *résumé* of our knowledge of the morbid anatomy of that organ. In the present fasciculus we have illustrations of the following diseases of the liver:—Lymphadenoma, dilatation of the ducts from obstruction, carcinoma, syphilitic cirrhosis, acute yellow and red atrophy, lardaceous disease, and nutmeg liver.

Most of the plates are fairly characteristic, and the colouring is not overdone. They will, no doubt, prove acceptable both to the learner for private study, and to the clinical teacher for illustration in lectures and pathological demonstrations.

PART III.

HALF-YEARLY REPORTS.

REPORT ON RHINOLOGY, PHARYNGOLOGY, AND LARYNGOLOGY.

By Kendal Franks, M.D., Univ. Dubl.; Fellow and Senior Demonstrator of Anatomy, Royal College of Surgeons; Surgeon to the Adelaide Hospital; Surgeon to the Throat and Ear Hospital, &c.

OZÆNA.

Many interesting communications have recently been made on this subject, which was brought before the late International Medical Congress, eliciting much discussion, in which the many opposing views held at the present day were enunciated.

Dr. B. Fränkel, of Berlin, in his paper introductory to the discussion, contented himself with laying down the points to which satisfactory answers were required, without himself expressing his views on any of them, except as regards the disease which gives rise to the ozæna, and which he assumes is always an atrophic catarrh.

Among the numerous diseased conditions which give rise to fœtor from the nose, there is one in which no disease of the bones, no ulceration, or other similar deep-seated disease is found, but in which, nevertheless, the fœtor is present in the most exquisite degree.

"Atrophic catarrh belongs to this form, as macroscopic observation of the mucous membrane and the ever-increasing microscopic investigations prove. In this form thick dried-up crusts are found, which have an intensely disagreeable smell. They consist of underlying portions of tissue and micrococci, and they sometimes fill the entire cavity of the nose. These signs are sufficient to characterise the disease. The following questions arise in connexion with this:—Shall we, for the future, call this most common form of ozæna alone by this name, or shall we speak of it as *ozæna simplex*, or *catarrhalis?* Would it not be better to style it

'catarrhus atrophicus ozænicans?' For it is still a matter of dispute whether the fœtor accompanying this disease is a symptom sufficiently important to warrant us in founding upon it a particular disease. . . . Where does the smell come from? From the decomposition of the secretions. But every decomposed secretion of the nose has not the same specific smell. Is it necessary that a particular ferment should be added to this? Is it some special form of decomposition which is found here? All we can assert at present is that that kind of decomposition which gives rise to the specific smell does take place undoubtedly in the nose."

Again, is it always an atrophic mucous membrane which occasions this form of ozæna? Does it occur also in hypertrophic catarrh? Fränkel believes it is always present in an atrophic mucous membrane, for he attributes the drying up of the secretions to the destruction of the glands. Cases in which the nasal mucous membrane is hypertrophied may also be accompanied by fœtor, but the fœtor is quite different from that met with in pure ozæna.

Further, is this atrophic catarrh always a constitutional disease? To what defect in the constitution can it be attributed? In Fränkel's opinion it does not prove any special dyscrasia, but foremost in the list of constitutional predispositions to which it may be referred, he would place scrofulosis, and perhaps syphilis.

As to the treatment, is the disease curable? The answer is, the atrophy is certainly not so, but we may do much for that troublesome symptom, the fœtor. To get rid of this, douches should first be employed; they are useful in removing the fœtid secretions. Experience also proves that Gottstein's tampon helps to loosen the crusts, and diminishes the odour. Astringents and the galvano-cautery are the most serviceable means we can employ against the atrophy.

Dr. Cozzolino, of Naples, recognises three forms (*Revue Mens. de Laryngol.*, Nov. 1, 1881)—1. Constitutional ozæna, or scrofulous rhinitis. 2. Catarrhal ozæna, due to an atrophy of the mucous membrane; and 3. Simple ozæna. He considers the first variety not as a local malady, but as a localisation of the scrofulous diathesis in the nasal mucous membrane. In this variety the products of the secretions take the form of greenish crusts. Syphilitic rhinitis may be sometimes met with allied to the scrofulous form. The second form—atrophic rhinitis—is usually an affection of youth, and is the result of chronic rhinitis, and never

occurs but in scrofulous subjects. Prognosis is much more favourable than in the preceding form, especially if the morbid process has not arrived at the atrophic stage. Under the third form—simple ozæna—Dr. Cozzolino discusses the theory of Hebdemus, of Dresden, who believes that the fœtor is the result of a gaseous exhalation from a mucous membrane deprived of secretion; and the view of Fränkel, who denies that ozæna can exist without increased secretion. For his own part, he believes that simple ozæna may exist in certain individuals who have naturally fœtid secretions, as of the feet, axilla, &c. The treatment in this case can only be palliative. Each form of the affection will require both local and general treatment.

Dr. Hermann Krause, of Vienna, reports autopsies of two cases of ozæna (Virchow's *Archiv*, Band 85, 1881) in which during life and at the *post mortem* no changes caused by syphilis or other dyscrasia were evident in mucous membrane, bone or cartilage. Only three other authors have reported their *post mortems* of cases of pure ozæna—namely, E. Fränkel (Virch. *Arch.*, Band 75), Gottstein (*Breslauerärztl. Zeitschrift*, 1879), and Hartmann (*Deutsche med. Wochenschrift* 13, 1878). Fränkel's cases, however, are diminished to one, as Cases II. and IV. were complicated by syphilitic bone disease, and Case III. occurred in a phthisical patient.

The question more particularly concerning us is this—Of what nature are the diseases of the nasal mucous membrane which, directly or indirectly, cause the obdurate fœtor, a means for subduing which has as yet not been discovered?

Case I.—A bootmaker, fifty-two years of age, died January 7, 1881. Long-standing ozæna; death from cirrhosis hepatica; also found chronic enlargement of spleen and ozæna. Nasal mucous membrane reddish-grey, thinned. Epithelium locally thickened; partially defective. Lower and middle turbinated bones small on both sides, and pointed at the extremities; posterior nares dilated. No ulcerations or cicatrices visible; bone thin and flexible. A fœtid mass of greyish-brown thick crusts present. A microscopical examination made of the whole nasal and adjacent mucous membrane.

Case II.—A washerwoman, aged forty, died February 13, 1881. Long-standing ozæna; died of chronic morbus Brightii. Diphtheritis laryngea et pharyngea; lobular pneumonia, and gangrene of lung; endocardial valvular excrescences; splenic hæmorrhagic infarction;

vertebral caries; tuberculosis. Examination of nasal cavities; no ulceration, though the mucous membrane was reddened. Some ozænic crusts. Anterior and posterior extremities of the inferior and posterior extremity of the middle turbinated bones pointed. In the pharynx the microscope shows abundant micrococci in the vicinity of the whitish streaks and points. Microscopical examination discovered a tendency to the conversion of the whole mucous membrane into fibrous connective tissue—in other words, an atrophic process in both cases; some of the migrated lymphoid cells transformed into connective tissue cells, others undergoing fatty degeneration and converted into detritus. Changes in the blood-vessels consisted in remarkable thickening of the tunica adventitia, with narrowing of the lumen, from which at last a considerable diminution of the circulating blood must result. However, none of the endarteritis obliterans was found in these cases, as described by E. Fränkel in his first case. In the glands different appearances were seen—either extreme infiltration of their tissues, or granular or fatty degeneration, and at last total disappearance.

If we notice, side by side with the extreme constriction of the blood-vessels in the connective tissue which surrounds these glands and penetrates into them, the very slight increase of fibrillar connective tissue in the septum between the single acini, and then the free space which remains within the latter by the loss of the degenerated epithelium from their walls, we come to the conclusion that the cause of these alterations not alone is to be found in a compression of the acini by means of the increase of connective tissue in their immediate neighbourhood, but must be sought for also in the broken-up, diminished, or completely destroyed blood-channels.

No changes were observed in the nervous structures; the periosteum showed the vascular changes well marked, and, resulting from these changes, a rarification of the bones.

The most remarkable thing, in his experience, is the proof of the previous destruction of the infiltration cells in the mucous membrane into an appreciable fatty detritus and the formation of numerous great fat globules. All this strongly suggests that these results are the immediate cause of the fœtor in ozæna. It is surprising to him that this observed fact should not have been noticed in any of the published accounts of *post mortem* investigations in ozæna, although he considers it a very important factor in

his own experiences of the disease. E. Fränkel, in describing the appearances of the first of his cases, covered parts of the epithelioid coverings of the surface with crumbling masses like detritus, and saw within the mucous membrane small oval or round clusters of glassy, homogeneous appearances of remnants of cells and nuclei, which he considered to be the retrogressive metamorphosis of circumscribed accumulations of small cells and nuclei like the infiltrations seen in the subepithelial layers of the vocal cords in phthisis; but he mentions nothing of an observed protracted destruction of the cell infiltrations, and lays no further stress on the above-mentioned experiences.

Gottstein also gives some signs of a commencing degeneration in his case. Thus he speaks of a finely-nucleated ground substance, and says the contents of the glands appear cloudy and infiltrated; here and there the cells could not be recognised in their structure.

Hartmann gives no histological account.

An exactly similar process is found in xerosis of the conjunctiva and in callous stricture of the urethra. The question now arises, whether a similar agent brings about shrinking and atrophy in the nasal mucous membrane and atrophy of the nuclei, to that which originates xerosis of the conjunctiva or stricture in the mucous membrane of the urethra. This question is not easy to answer, because it is in the very nature of the disease that, at the time it comes under observation, many years have usually elapsed since its commencement, and hence it is not possible for us to determine the appearances at the beginning, or its originating cause. The only thing which we frequently ascertain from the usually defective anamnesia is, that for a long time previously an obstinate cold has existed, with obstruction and a thick purulent discharge from the nose, which only confirms the opinion of a previous chronic inflammation.

In many cases actual transference of a virus on to the mucous membrane of the nose may take place, as is frequently accepted as probable in the ætiology of conjunctival blennorrhœa. But still there is a large number of cases where no such possibility can be maintained. We may then justly ask, why should a chronic catarrhal inflammation lead in one case to atrophy of the mucous membrane and to fœtor of the secretions, whilst in another case it may last through the whole period of life without producing any atrophic change in the nasal mucous membrane. Clinical and anatomical observations up to the present do not afford a sufficient

answer to this question; and until a more satisfactory explanation is found we must be content to fall back upon a constitutional predisposition in the individual as to the cause for the peculiar sequence in these processes in the mucous membrane. There is no ground, however, for assuming that this constitutional idiosyncracy has any connexion with scrofulosis.

We find a sufficient cause for the peculiar fœtor in ozæna in the fatty degeneration of the new-formed cell proliferations, even while they are in intimate connexion with their original soil, and before their appearance on the surface, and in the rapid change of the fat into fatty acids and consequent decomposition, as proved by the appearance of margarin crystals in the crusts—these fatty acids being the invariable products of the decomposition of albuminous matters.

We must assume that different stages of one and the same process are going on in the nares, as we find in one part of the nasal tract the transitional stages in operation and in other parts the fully-developed changes. The explanation here offered is much simpler than that suggested by B. Fränkel, who thinks that the fœtor is due to the purulent destruction of the atrophied mucous membrane.

Dr. E. Fournié, of Paris, read the second paper on the subject of Ozæna at the International Medical Congress, 1881 (*Transactions*, Vol. III., p. 303). He first reviews the opinions previously held on this subject, when "ozæna" and "chronic coryza" were convertible terms for the same disease. Until lately narrowness of the nasal cavities, and consequent obstruction causing the retention of the nasal discharges, was looked upon as the immediate cause; but since the investigations of Zaufal, Michel, and Gottstein the disease enters upon a new phase, and the peculiar fœtid discharge of ozæna is attributed no longer to narrowing of the nasal passages, but on the contrary to their increased size. This amplitude is due to the rudimentary size of the inferior turbinated bone, which plays such an important part in the normal condition in the cleansing of the nose by the force of the expired air. It is easy to see how the nasal secretions accumulate as they are with difficulty removed by the enfeebled current of air; they then dry up, and form crusts which retain even after their expulsion a most repulsive odour. The question is not, however, completely answered. Is this increase of capacity in the nasal fossæ primitive? May it not be a consequence of lesions in the sinuses? Is it

sufficient to explain the appearance of ozæna? After referring to the views held by the authors alluded to above, he proceeds to discuss the characters of ozæna itself. Firstly, as to the fœtor. The odour of true ozæna does not resemble that of inflammation, nor that of caries, necrosis, or syphilis. It is *sui generis*, and to recognise it it must have been smelt. It may, however, vary in degree.

To what is this fœtor due? It is not due to inflammation, as in ozæna the inflammation is much less intense than that found in certain diseases in which there is no ozæna. Is it due to the presence of micrococci? It has been asserted that the bacterium fœtidum found in the perspiration from the foot has been seen in the nasal discharges. Fränkel has frequently examined these discharges, both in their softened and dried conditions, and has found broken down cells and some micrococci, but he has never been able to discover anything specific. Zaufal's view is that the ozæna is produced by a peculiar conformation of the nose and its cavities, which favours the accumulation of the products of secretion. In this view Fournié does not entirely agree. In the first place, he has often found true ozæna, together with a perfectly normal formation, both internal and external, of the nose. In the second place, many patients suffering from chronic coryza with abundant discharge have no fœtor, although the flattened nose, and the hypertrophic dilatation of the nostrils give them all the external appearances of a person suffering from ozæna. Finally, if it were true that the odour was produced by alteration in the mucus retained within the nose, it would be sufficient to keep the nasal cavities clear in order to prevent the odour from being produced. No doubt washing out the nose diminishes the fœtor; but why? 1. Because one of the foci of the fœtor has been got rid of, the crusts. 2. Because the glands which secrete the mucus and hence the smell, have partaken of the cleansing process. Were it otherwise, were the fœtor caused in the manner alluded to above, it should reappear only after a certain period—namely, the time necessary to develop the change in the mucus. But this is not what actually takes place, as the fœtor reappears as intensely as ever a few hours after the cleansing process, provided only that pure water has been used. Fournié does not deny the influence which dilatation of the nasal cavities possesses in promoting drying of the mucus, but he does not admit that the prolonged period during which the mucus remains in the nose is the cause of the specific fœtor.

The following is the explanation which he gives of the source of the fœtor. He considers that the peculiar smell of ozæna is the product of the secretion of the glands. Every region of the body has an odour *sui generis*, which naturally exhales or is thrown into relief by disease. The glands of the pituitary in the same way secrete an odour, and this smell in certain cases develops the specific characters of the ozæna. The most important question, then, to consider is, why in certain cases the natural odour of the pituitary membrane assumes the characters of the fœtor of ozæna. If we eliminate altogether inflammatory processes, whether chronic or acute, as well as specific causes which may produce a nasal fœtor, one explanation alone remains possible—the *constitutional state of the individual*, a state which excites a morbidly odorous secretion in the glands of the Schneiderian membrane.

Secondly, as to the secretions of the pituitary membrane. A prominent symptom in this disease is the tendency of the products of the secretions of the pituitary membrane to cohere. Fournié considers that there are two forms, the moist form and the dry. In the *moist* form the mucus forms lumps which do not dry up; they are surrounded by a certain amount of moisture, probably due to the predominance of the catarrhal state. This form is specially met with in people of a scrofulous tendency. In the dry form the mucous secretions not only cohere as soon as they leave the glands, but they become inspissated and assume a blackish or greyish tinge, and adhere firmly to the membrane. This form is chiefly found in the naso-pharynx and in the posterior portions of the nasal fossæ. The rapidity with which these products are formed is such, that the surface which has been cleansed one day is on the morrow covered over afresh. These products do not in any way resemble the products of secretion in their morbid states, and the rapidity with which they are formed disposes of the idea of any mechanical cause arising from the excessive dilatation of the nostrils. Something more is necessary, and that something is, a specific alteration of the glands which supply the mucus.

In the third place, what are the anatomical lesions? These are out of all proportion to the intensity of the disease. In *the dry form*, underneath the inspissated crusts, the mucous membrane is red, bleeding, and excoriated, rather than ulcerated. This form is usually met with in people of an herpetic tendency. *The moist form* is more common. Here the mucous membrane lining the nasal cavities is more or less swollen, tumefied, excoriated in

places, especially in the narrower portions of the nasal cavities, and in these situations covered over with small masses of muco-purulent matter, more or less tinged with black.

In conclusion, then, ozæna constitutes a morbid condition distinct from all others, and characterised by a specific fœtor, by products of secretion altered in a special manner, and finally by peculiar anatomical lesions. This morbid condition Fournié believes to be due to a constitutional predisposition.

The treatment of ozæna consists accordingly in—(1) modifying the constitution, and (2) locally suppressing the morbid manifestations. To modify the constitution Fournié prefers for those suffering from the moist form sulphur baths, taken in a series of twelve at a time, three or four times a year; at the same time cod-liver oil, iodide of potassium, or iodide of iron, should be taken as occasion may require. In the dry form, alkaline baths alternating with arsenical baths are recommended, in series of twelve, three or four times a year; at the same time arsenic and bicarbonate of soda should be taken alternately. Locally the nose should be thoroughly cleansed two or three times a day with warm water, to which sea-salt is added in the proportion of a teaspoonful to a litre of water; mechanical means should be employed to detach crusts which do not yield to the douche. Fournié speaks very highly of the cotton-wool tamponade; Zaufal uses it to remedy the enlargement of the nasal cavities; Gottstein employs it to stimulate secretion; Fournié believes that when the cotton-wool is introduced into the nostril it acts in a Listerian manner—*i.e.*, it prevents the germs in the external air from penetrating into and acting on the mucus, already only too prone to decompose. Whatever be the *modus agendi* it is an excellent palliative.

The agents employed to neutralise the fœtor are numerous, including antiseptics from permanganate of potash down to iodoform. Fournié recommends boracic acid, 3 parts in 500, or salicylate of soda, 10 parts in 500.

Dr. Eugene Fränkel, of Hamburg (Virchow's *Archiv*, Vol. LXXXVII., Feb. 4th, 1882), discusses the question as to the immediate cause of the fœtor of ozæna. Certain therapeutic agencies assist us in offering an explanation of it, and it is by their means that we gain at least the subsidence of this most disagreeable of all the symptoms. The principal of these agents is the use of simple plugs of cotton-wool, advocated by Gottstein in 1878, and acknowledged at the last Medical Congress in London to be

ST. BARTHOLOMEW'S HOSPITAL
RADFORD
LIBRARY
MANCHESTER

the very best method of causing the disappearance of the fœtor. None of those who make use of this method, however, have advanced any theory as to its *modus operandi*, except Happach, in his dissertation (Strasburg, 1879), who believes, with Gottstein, that by the tampon secretion is increased, and thus the new formation of crusts is prevented. Linen rolled up into cylinders has not the same effect as cotton-wool. Moreover, in almost every nose crusts are formed which have no fœtor. We must look beyond the nose for the explanation of the existence of the smell. He believes it is to be found in the micrococci and bacteria we now know so well; these are caught up and retained by the tampon, as on a filter, thereby preventing the decomposition of the secretion. A certain condition of the soil, in which these bacteria may develop, is necessary, and this we are unable as yet to define exactly, but this condition is not supplied by chronic rhinitis. By the hourly changing of the plugs it is quite possible to cause the fœtor to disappear, as the secretion is removed each time before it has time to decompose. B. Fränkel's theory, that the cause is to be found in suppuration of the mucous membrane, is not anatomically correct. The author believes it is nearer the truth to look upon the bacteria, whose presence we can always demonstrate, as the chief factors in developing the fœtor, than to assume the presence of an unknown chemical ferment. Up to the present time four reports of accurate *post mortems* of ozænic cases have been made by Hartmann, Gottstein, Fränkel, and Krause. They are all unanimous in finding enormous cavities and slight development of all the turbinated bones; also in the results of their microscopical investigations, which showed connective-tissue change in the mucous membrane, with partial degeneration of the secreting elements. Zaufal built up a theory on the existence of large cavities, which he considered to be congenital, and believed all subsequent changes in the mucous membrane to be consecutive to this enlargement; in this view he is supported by Hartmann and Alfred Martin (*de l'Ozéne vrai*, Paris, 1881). E. Fränkel, however, agrees with Gottstein and Schäffer in regarding the largeness of the nasal cavities as the last stage of a diffuse, at first hyperplastic, but subsequently atrophic, rhinitis; the more so as he has had the opportunity of seeing two more cases in the dissecting-room, the results of the examination of which agreed with those of Gottstein and Krause. He does not, however, agree with Krause as to the similarity of the structural changes in ozæna, with xerosis of the

conjunctiva and callous stricture of the urethra, in both of which we can easily test the odour of the secretion, if any, and in neither of which has fœtor been found as a symptom. His last case was that of a man of forty-five years of age, who died of phthisis, and who had had fœtor for many years. He found in it the enlargement of the cavities, the smallness of the turbinated bones, the mucous membrane intact, but thin, and covered with green secretion, with the characteristic odour, consisting of detritus, fat-globules, and numerous ball and rod-like bacteria. He did not find endarteritis obliterans, nor the heaps of fat-globules in the mucosa which Krause described in his cases. From the results of his investigations, E. Fränkel, however, holds, with Gottstein and Krause, that atrophy of the mucous membrane is necessary for the production of fœtor, and that the disappearance of Bowman's glands is an important factor. It is doubtful whether the atrophy follows hypertrophy, or whether, as in the granular kidney, we have a process in which there is at first no appreciable thickening of mucous membrane. The term "ozæna" should be left out of our nomenclature as not pointing to the anatomical condition, and, following Gottstein, the author prefers the term "rhinitis chronica atrophicans fœtida," as more suitable and definite. From the fact that five out of the six cases in which autopsies were made, were cases of phthisis, it would seem as if there were some intimate connexion between ozæna and this affection, but further observations are necessary before we can assume this conclusively—in fact, it is more probable that rhinitis fœtida is purely a local, and not a dyscratic manifestation, as clinical observations would teach us. If our theory that atrophy of the mucous membrane, and not enlargement of the nasal cavities, is correct, there can be as little question of curing the affection as there would be of causing the retrogression of a granular kidney or a cirrhotic liver. Gottstein's treatment by plugging is certainly as *tuto, cito et jucunde* as regards the fœtor as any other; by the application of strong astringents on the already atrophic mucous membrane, nothing is to be gained, unless indeed we were able to get the disease in its really hypertrophic stage, in which case, theoretically, we ought to be able to effect a return almost to the normal condition. Such cases, in practice, however, are rare, and so obstinate as to defy almost every treatment.

GALVANO-CAUSTIC TREATMENT OF THE NOSE, THROAT, AND LARYNX.

Professor Voltolini, of Breslau (*Trans. Inter. Med. Congress*, Vol. III.), states that the galvano-cautery which was discovered in Breslau by Middeldorph did not at first meet with the acceptance which it deserved, the fault lying partly in the construction of Middeldorph's battery, which was charged with the strongest acids. Voltolini's new battery has greatly contributed to the more widespread use of the galvano-cautery, and is so arranged that either the induced or constant current can be used. He has only applied the galvano-cautery in diseases of the three above-mentioned cavities in the form of a snare or as an actual cautery, but he very seldom uses the porcelain point. In respect to this latter, the porcelain cools too slowly, and there is therefore the danger of burning the healthy parts in withdrawing the instrument, if the passage is not sufficiently wide.

The many aimless batteries and instruments which are now distributed over the world owe their origin entirely to instrument makers, who have not sought the assistance of medical men well versed in the subject.

It is a great mistake to believe that the galvano-cautery is a safeguard against bleeding; on the contrary, its use may give rise to dangerous hæmorrhage, and it should be our object to ascertain how operations should be conducted so as to avoid hæmorrhage, and thus reap the greatest advantages from the use of this instrument. No other method has been so far found to replace the galvano-cautery in the treatment of polypi, tumours, abscesses, &c., in the nose. The cold wire snare is not suitable for the ablation of nasal polypi, since the surface from which the polypi spring must be destroyed with the galvano-cautery. When the nasal polypi are very numerous the operation may be simplified, if in the first instance the polypi are destroyed by burning with the red-hot galvano-cautery. If the nose is distended, as is usually the case, with an accumulation of polypi, the porcelain burner may be made use of. In one or two days after this burning the polypi will have become so disorganised that whole clusters may be removed with the snare without any danger of bleeding.

In cases of great swelling of the turbinated bones there is no safer and simpler method than touching them with the galvano-cautery; but in these operations, as well as in treatment of naso-

pharyngeal tumours (fibromata), we must be guided by certain fixed principles if we would avoid hæmorrhage. Inattention to this rule is the reason why electrolysis is often preferred to the galvano-cautery; but electrolysis is much more tedious, more difficult to manage, more uncomfortable for operator and patient, as the instrument must be held *in situ* for at least ten or fifteen minutes at a time. Besides, more can be accomplished in five minutes with the galvano-cautery than with electrolysis in five days. The galvano-cautery must be employed according to the following rules, when a tumour supposed to contain large quantities of blood has to be treated (which, however, is not the case in ordinary so-called mucous polypi):—

I. The point of the cautery must never be driven directly into the tumour, as in this case a gush of blood might take place which would probably prove fatal to the patient.

II. Such tumours must therefore only be touched with the flat blade of the cautery, and this should not be repeated too often at the first sitting. By touching the tumour in this manner after several days it consolidates, and we may then proceed more boldly, but always with the flat blade.

III. But even when the flat surface of the blade is alone used, too great a heat must be avoided, lest the blade penetrate too deeply. As the cautery adheres readily to the tumour, and is therefore liable to tear away portions when being withdrawn, thus perhaps giving rise to hæmorrhage, the instrument should be again heated in order to detach it the more easily.

In operations in the larynx the galvano-cautery cannot be surpassed. In the removal of ordinary polypi the operator may select whatever method he prefers, but there are certain growths in which the galvano-cautery is pre-eminently useful. These are those sessile proliferating growths which spread over a large portion of the inner surface of the larynx. Caustics in these cases are dangerous, as their effects cannot be limited. In most cases of stenosis of the larynx the galvano-cautery is much to be preferred to dilating instruments, such as bougies, tubes, &c. Such instruments can never ensure the non-recurrence of the stenosis. The healthy parts of the larynx are greatly injured by use of bougies. When a swelling extends from one side of the larynx across the middle line, the other side remaining relatively healthy, the swelling deflects the bougie towards the healthy side, which may thus be greatly injured, while with the galvano-cautery the diseased side is

alone touched. The growth is thus burnt until both sides are the same, or if the tumours exist on both sides, and hence the bougie cannot cause injury as in the above-mentioned manner, still the galvano-cautery removes the swelling more surely and permanently.

FOREIGN BODIES IN THE AIR PASSAGES.

Voltolini (*Monatschrift für Ohrenheilkunde*, July, 1879) describes the case of a peasant who had swallowed a needle about an inch long, with a tolerably short thread attached, and who walked about the whole day with the needle in his throat in order to attend the clinique of Prof. Voltolini. There was neither pain nor cough. The man felt it deeply situated in his neck, and he had neither eaten nor drunk anything for fear of displacing the needle. The laryngoscope revealed the black thread placed obliquely across the vocal cord from below upwards. Tracing its course downwards, the needle was seen stuck in the anterior portion of the trachea, not far from its bifurcation. When the patient coughed, the thread was seen to wave freely, sometimes to the left side above the arytenoid cartilages, sometimes between them. Had the thread been shorter, tracheotomy would have been necessary. Attempts at extraction were not successful; but, whilst the patient was resting at the end of one of these fruitless efforts, he suddenly felt, at the end of a fit of coughing, that the needle was in his mouth. Voltolini suggests that if another similar case should present itself, the needle should be sought for with a long probe magnetised at its extremity, whilst a magnet placed externally opposite the needle would prevent its changing position.

He reports a second case of a man on whom he had previously operated for a laryngeal polypus. A recurrence of the disease brought the patient into the hands of another specialist. The latter made several attempts with a forceps similar to that of Türck, Stoerk, Charrière, Luer, Mackenzie, Œrtel, and Fauvel, but the handle broke, and the blades of the forceps, with portion of the handle, the whole measuring about $1\frac{3}{16}$ of an inch long, fell into the right bronchus. The patient was seized with a frightful cough, which lasted day and night for several weeks, with fever and bloody sputum. At the time of the accident he experienced sharp pain in the right pectoral region. The pain continued as well as the cough, although the latter diminished somewhat in intensity. The patient continued in the same state for nearly nine months, when he grew worse and was obliged to keep his bed. One day he was

seized with a violent paroxysm of coughing, which he feared would have choked him. At the end of it he coughed up the forceps. The cure was very rapid. Voltolini thinks that in this case also the foreign body might have been sought for with a magnetised probe.

Hering (*Centralblatt für Chirurg.*, No. 8, 1879) reports the case of a girl, aged eighteen, who swallowed a needle, which was found to be fixed transversely in the larynx. One extremity was fixed in one of the cartilages of Santorini, the other in the muscles of the neck. The needle was broken across by means of Türck's forceps, and the two pieces withdrawn separately.

Chiari (*Monatsch. für Ohrenheilkunde*, July, 1880) relates the case of an individual, aged twenty-four, who whilst eating felt a sharp pain in the region of the neck, with suffocation and complete aphonia. Later on the voice returned without hoarseness. A doctor, without making a laryngoscopic examination, gave him an emetic. The night passed over well, but in the morning the hoarseness reappeared. Another emetic was administered. The following day another doctor recognised with the laryngoscope a foreign body in the larynx, and made fruitless attempts to remove it. The patient then went to Schrötter's clinique. Deglutition was easy and painless, the voice aphonic. The larynx was not painful to pressure applied externally. The patient felt keenly a foreign body sticking in his neck. Laryngoscopic examination was very easy, and showed in the rima glottidis between the vocal cords a piece of white bone, irregular in shape, dentated, about 3 cm. long by 1·5 cm. broad, impacted at one end beneath the epiglottis, which was swollen and red. The arytenoid cartilage and the vocal cord of the same side were swollen and red. The bone could be touched with a probe, and its extraction seemed easy of accomplishment. The operation was delayed, as it was decided to perform laryngotomy. Cold applications were made to the neck, small pieces of ice were slowly swallowed, cold and liquid nourishment were taken greedily. The same evening, at 7·30 p.m., whilst eating some iced fruit, a sudden fit of coughing seized the patient, and the fragment of bone was ejected without pain and without hæmorrhage. The bone was much larger than had been supposed and very pointed.

This case illustrates how tolerant the larynx is in some cases, and the length of time which may elapse before having recourse to extreme measures.

Almost at the same time there came to the clinique a man, aged

fifty-one, with great respiratory distress and laryngeal symptoms. Laryngoscopic examination revealed the right arytenoid cartilage firmly fixed in the middle line, the left one could still move slightly outwards. The whole mucous membrane of the larynx was red, the opening of the glottis very narrowed, and between the true and the false vocal cords a white body was seen, about the size of a pea, and at first thought to be mucus. After a few days the patient was much worse, and it was possible to diagnose, as well by the resistance offered by the body to a probe as by the odour, that it was a piece of necrosed cartilage. On June 30th Schrötter removed it with forceps, and discovered a piece of cartilage much larger than he had thought. Part of it had been hidden in the sinus of Morgagni. It was a piece of cartilage, annular in shape—the ossified and necrosed cricoid cartilage. The patient had been hoarse for three years, and had from time to time difficulty in breathing. The lungs were healthy, and there were no certain signs of syphilis. The formation of this sequestrum had certainly been the result of a perichondritis and had been for months in the glottis. This case shows that in cases of foreign bodies in the larynx we can wait without inconvenience until such time as a new method of extracting it is found.—*Revue des Sciences Médicales*, Paris, Jan., 1882.

A NEW DANGER IN ANÆSTHESIA.

Dr. George Fischer, in the *Deutsche Zeitschrift für Chirurgie*, 1881, Vol. XV., p. 188, relates a case illustrating a curious and novel danger in anæsthesia which, so far as we know, has not yet been recorded. A patient with a compound fracture of the thigh suddenly died during anæsthesia from chloroform. The chloroform was pure, no food or mucus was found in the mouth, the tongue had been drawn well forward, and on the first appearance of serious symptoms, when but little of the anæsthetic had been given, artificial respiration and electricity had been used, but in spite of all and from no known cause the patient died. The autopsy explained it all. A piece of chewing tobacco was found in the larynx completely obstructing the glottis. Hereafter not only must the operator remove artificial teeth before giving an anæsthetic, but he must see that a tobacco-chewer has none of the beloved weed hidden in any remote corner of his mouth. At the University Hospital, in Philadelphia, we learn this precaution is always taken, since in one case lately a patient nearly died from the same cause.—*Med. News*, Feb. 25, 1882.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE COLLEGE OF PHYSICIANS.

SESSION 1881-82.

GEORGE JOHNSTON, M.D., President.
ALEXANDER NIXON MONTGOMERY, M.K.Q.C.P., Honorary Secretary.

Wednesday, March 1, 1882.

THOMAS FITZPATRICK, M.D., Vice-President, in the Chair.

Ascaris Lumbricoides.

DR. J. W. MOORE, Vice-President of the College, exhibited a large specimen of the common round worm (*ascaris lumbricoides*) passed that morning by a girl aged sixteen years, who had been admitted into Cork-street Hospital three or four weeks previously in measles. It was a simple attack, and she recovered quickly, and was sent to a convalescent home, where unfortunately she caught cold, and her illness passed into a severe attack of catarrhal pneumonia. She was readmitted, seriously ill, and had to be treated with turpentine in rather large doses. Last night, in one of her fits of coughing, she coughed up the worm without the least trouble. It was curious that the turpentine prescribed for the pulmonary affection should have acted as a vermicide.

Temperature Charts in Fever.

The VICE-PRESIDENT of the College submitted a series of charts illustrative of clinical observations in continued fever.

CASE I. *Coincidence of Typhus and Typhoid Fever.*—In one of the closing days of last August a young man came from Wexford to Dublin to visit the Horse Show. He had been subject to asthma, and for this complaint he was admitted to the Meath Hospital a few days after his arrival in Dublin. When he had been two or three days in hospital his

temperature rose, and he seemed to be passing into an attack of continued fever. He (Dr. Moore) came to the conclusion that the fever he was suffering from was typhus, for the disease was then prevalent in Dublin, and it could be well imagined that a fresh young countryman would fall an easy victim to it. The fever ran on, and his temperature rose on one occasion above 105°. His skin became very dusky, but on no occasion did a true macular rash appear. On the seventh day of his illness there was an attempt at a crisis, his temperature falling between morning and evening more than 2°, and from the same evening to the following morning another 2°, but only to rise again. On the evening of the tenth day his highest temperature was 105·4°. On the thirteenth day there was a second definite attempt at crisis, and on the morning of the fourteenth day his temperature fell to 100°. On the eighteenth day he was almost apyrexial, his temperature being only 99°. At this time there were troublesome chest symptoms, and he began to be feverish again. The fever rose, until on two occasions the thermometer registered 104°—on the evenings of the twenty-fifth and twenty-seventh days of his illness. On the morning of the twenty-eighth day there was very considerable hæmorrhage from his bowels, and he passed several motions of a tarry consistency. This was followed by an attempt at defervescence. As this went on the typhoid character of the fever became more manifest, and a few rose spots appeared on his body. The fever continued until the sixtieth day, terminating at last by lysis. The circumstances under which his two illnesses occurred were remarkable, and the whole history of the case was not made out until a considerable interval after he left the hospital. He went down to the county Wexford as soon as he was fit to be moved. After a few weeks he wrote to say that he was still rather weak, and that his mother was down in fever. When the hæmorrhage took place from his bowels suspicions of the correctness of the original diagnosis were aroused, and it was concluded that the fever was typhoid from the very outset, particularly as there had never been any true macular rash. However, there was no doubt that the fever of which the young man's mother was ill was spotted typhus. The truth at last leaked out—that, before the young man came to town in August, his brother had been suffering from typhus. He, no doubt, came to Dublin in the incubation stage of the disease, for the symptoms developed two or three days after his arrival in town; and it was clear that he passed through the typhus fever, and that he then got typhoid fever in Dublin. The history of the case was instructive, as showing that the two continued fevers might coincide, or at all events follow one another very closely.

Case II. *Intestinal Hæmorrhage in Typhoid Fever.*—The next chart was one of an ordinary typhoid fever, illustrating the important clinical

fact that hæmorrhage from the bowels at an early period of the illness was sometimes of advantage to the patient. The case was a typical one of typhoid; rose spots were present, and there was a certain amount of diarrhœa. The patient was a young man of about twenty years of age. On the twelfth day he had considerable hæmorrhage from the bowels, which lasted for twenty-four hours. Hardly had it passed away when there was an immediate amelioration in his symptoms. His temperature rapidly declined, so that he was completely apyrexial on the eighteenth day. It is well known that early hæmorrhage in typhoid might act remedially by causing depletion and relieving the hyperæmia of the intestinal mucous membrane, which so often precedes the development of typhoid ulceration of the ileum.

Case III. *Slow Pulse in Convalescence from Typhus.*—The case represented by a third chart was also, in many respects, an ordinary one. It was typhus maculatus, occurring in a young man twenty-three years of age. The fever ran a course of sixteen days. The record of the first few days showed that the pulse was weak and rapid. On the fourteenth day it fell to 86. On the seventeenth day of his illness he was completely apyrexial, his pulse being only 40 in the minute; and during four days afterwards it never exceeded 46. Then it began to rise again, reaching on the twenty-fourth day 72, and on the twenty-fifth day 86 in the minute. That comparatively quick pulse coincided with a completely apyrexial state, his temperature on the twenty-fourth and twenty-fifth days being only 98·4° and 97·2° respectively. As Stokes and Murchison had pointed out, there might be subnormal pulse during the pyrexial period of typhus, but it was more frequent in convalescence.

Dr. Nixon said one point of interest in the first chart was the sudden reduction of temperature during the seventh or eighth day of the typhus. He had had some experience of that phenomenon, and Liebermeister had called attention to the prognostic value of it. If there was a marked reduction of temperature—sometimes to normal—about the seventh or eighth day, the case would probably run a favourable course. Some time ago he attended a colleague in typhus, and the temperature on the seventh day was down to normal. On the following evening it rose again, and the fever went on to the thirteenth or fourteenth day, but it assumed a mild type.

Dr. Walter Smith said that in Sir Patrick Dun's Hospital this season that peculiarity existed in every case of typhus, and he pointed it out to the class. In the great majority of instances it occurred on either the seventh or the ninth day of the fever. In one severe case the temperature loop occurred on the eleventh day, which indicated that the fever would be a long one and of an unfavourable type. There were

only two fevers in which this remarkable depression of temperature occurred—namely, typhus and measles. In the latter, the temperature, after an initial rise, sank just before the eruption appeared—frequently dropping to the normal—so that an inexperienced practitioner might think that the patient had merely a feverish cold. But when the eruption came out the temperature rose quickly again to a maximum, and then fell with the fading of the rash. In typhus a depression generally occurred on the seventh or ninth day. In doubtful cases this fact was a matter of interest in regard to diagnosis.

Dr. Henry Kennedy said it had been observed that in continued fever the crisis commonly occurred on an odd day, such as the seventh or ninth, and very unusually on an even day. The depression of temperature in question had also been more common in some years than in others. He had himself recorded a number of cases in which typhus and typhoid fevers were unfortunately mixed, and in these the typhoid followed the typhus. There had been cases in which the maculæ and the rose spots appeared together, and others in which the maculæ showed first and the rose spots afterwards. It was not uncommon for the tarry discharges to be set down as blood—in fact, it required a good deal of care to be sure that the discharge was bloody. Intestinal hæmorrhage was frequently beneficial. A few years ago the late Dr. Hayden brought forward a number of typhoid cases of a different character, in which the hæmorrhage occurred at the end of the first week, and these were all terrible cases, scarcely one of them having been saved. Dr. Hayden showed three or four *post mortem* specimens from those cases at the Pathological Society, and there was no evidence to show that the hæmorrhage came from any ulceration, but there was evidence of great general congestion. Still, as a general rule, the hæmorrhage was beneficial. Trousseau had drawn attention to the fact that for a long time hæmorrhage was looked on as a grave occurrence, but that was questioned by the late Dr. Graves; and he (Dr. Kennedy) thought he had proved that hæmorrhage, whether occurring in typhus or typhoid fever, was not by any means serious. On the other hand, he had examined cases in which there was not the slightest trace of ulceration, and in which, nevertheless, the patients had died of hæmorrhage. In one of these cases he examined the body after death, and found a large quantity of blood effused in the ileum—such a quantity as was sufficient to cause the girl's death, and yet there was no ulceration there. The last point was as to the slow pulse. That had repeatedly come under his notice. He had recorded cases in which the pulse fell to an extraordinarily low degree during the fever. As a general rule it was not of moment, and as the patient got better the pulse rose.

Dr. J. W. Moore, in reply, said that the attempt at crisis at the end of the first week was a well-known phenomenon in typhus. It might

be remembered that a few years ago he placed on record a series of cases of undoubted typhus, all of which terminated between the seventh and the tenth day. They were not cases of aborted typhus, but of typhus of short duration, in which the early defervescence was complete and final. As to the seven-day period, there was no doubt that in both typhus and typhoid the disease tended to terminate at the end of a week—whether it was the first, second, third, or fourth week. Dr. Stokes long ago pointed out what he called the "law of periodicity," to which acute diseases were apparently subject. He agreed that in typhus there might be hæmorrhage from the bowels; but the cause of the hæmorrhage in many cases was different from that in typhoid—namely, intense hyperæmia of the mucous membrane relieving itself by hæmorrhage, which prevented subsequent mischief. The hæmorrhage of the bowels in typhus, and in the later stages of typhoid, was probably due to the dissolution of the blood; and in typhoid there might also be hæmorrhage from ulceration and erosion of the vessels. Murchison had given Dr. Kennedy credit for his observations as to slow pulse in the pyrexial stages of the fever.

ST MARY'S HOSPITAL
RADFORD
LIBRARY
MANCHESTER

Apparent Recovery from Morbus Addisonii.

Dr. Finny read a paper entitled, "A Case of Apparent Recovery from Morbus Addisonii." [It will be found at page 293.]

The patient who was the subject of the disease was introduced and examined by the members present.

Dr. Nixon observed that there was nothing to make it certain that the patient had suprarenal disease; nor was it certain that the group of symptoms associated by Addison with the disease named after him was at all associated with disease of the suprarenal capsules. One or two cases had come under his observation in the Mater Misericordiæ Hospital in which the symptoms laid down by Addison were present to a marked degree, and yet afterwards there was a considerable abatement of them. In one remarkable instance, some weeks before admission, the patient vomited his meals two or three times during the day. He had squeezing pains in his abdomen, which shot up into his back; and what specially brought him to hospital, along with the irritability of his stomach, was that he had noticed a discoloration in his skin seven or eight months before. It began on the backs of his hands, and at first he tried to wash it off, but could not. When he presented himself at the hospital the discoloration was specially marked under the axillæ, and upon the nates, the prepuce, and the soles of the feet. The skin was dry and harsh, and the pulse 84, very small, weak, and thready. The sounds of the heart were feeble, and could with difficulty be distinguished. The discoloration of the skin remarkably contrasted with that

white pearly condition of the sclerotics which is so characteristic of Addison's disease. The temperature was subnormal, being barely 98°. The case was looked on as a typical one of morbus Addisonii. The treatment was aimed at meeting the extreme irritability of stomach. After a little time the vomiting ceased. The man was in hospital for two months. The discoloration became less marked, and the man was ultimately able to take walks in the garden and was subsequently discharged, considerably improved. There was pigmentation at the time of his discharge. Three months afterwards he presented himself perfectly well, and there was no trace of pigmentation. When he saw the notice of Dr. Finny's paper he thought it would be interesting to ascertain whether, in the case of that patient, the symptoms returned after the period of abatement. He accordingly wrote to Dr. Nicolls, of Navan, who had sent the case to him, and received a letter from him stating that he saw the patient a week ago, and he was then perfectly well, and had no traces whatever of the symptoms of Addison's disease. If that man had died in hospital, even without any examination of the suprarenal capsules, every member would have agreed with him in concluding that the case was one of Addison's disease; and he did not know that the circumstance of the patient getting better warranted them in disregarding the diagnosis as a mistaken one. Similarly, he did not think that because Dr. Finny's case was cured they were not to regard it as the special form of disease described by Addison.

Dr. Woodroffe, having been called on by Dr. Finny, said that on seeing the patient that evening he did not recognise her at all, so marked was the change for the better since he saw her first.

Dr. Henry Kennedy said it appeared to him that they were at present only learning this disease. The number of cases that had occurred since the time of Addison was comparatively small. He concurred with Dr. Nixon that it did not follow that because a case recovered it was not Addison's disease. They knew that cases of cancer, phthisis, and fever varied, particularly as regarded duration, and he did not see why this should not be true as regarded Addison's disease. Dr. Finny's case was a comparatively mild one. He did not learn from the patient that she had had sickness of stomach at all. The sickness of stomach was an important feature in the great majority of those cases. He had long had the impression that this disease was in some way connected with the strumous diathesis—first, because it was found in the suprarenal bodies, and, secondly, because the vast bulk of the cases that were examined after death showed symptoms of tubercular disease of the lungs.

Dr. Walter Smith said the diagnosis of Addison's disease after all amounted to a verbal quarrel. The most conspicuous symptom of the disease was the disturbance of the pigment formation of the skin, and

the most important symptom was the anæmia, with its attendant train of symptoms. They knew very little of the causes of the affection that was called idiopathic pernicious anæmia, and Addison's disease might be looked on as an analogous condition, *plus* excessive pigmentation. They could not map out the boundaries between idiopathic pernicious anæmia and ordinary anæmia. If Addison's disease were the effect of anæmia, *plus* pigmentation of the skin from unknown causes, it would be conceded that it was idle to attempt to establish a positive diagnosis of it. It was at present impossible to decide the question. As to the association of Addison's disease with struma, the same argument would prove diabetes to be strumous, for a large proportion of those who were afflicted with diabetes died of pulmonary phthisis. The rarity of leucoderma had been spoken of; but it should be remembered that diseases were often called rare only because well-marked examples of them were rare, the fact being that with symptoms in a minor degree they were common enough. A large share of the population had small nævi over the body, but it was rare to see them large enough to attract the attention of the surgeon.

The Chairman mentioned the case of a boy who had discoloration of the skin and debility, but who recovered under treatment. He was of a strumous habit.

Dr. Knott said he had tried the experiment of extirpating the suprarenal capsules in cats, dogs, and rabbits, and very few recovered the operation. There was great pigmentation of the rete mucosum in this case.

Dr. Finny, in reply, said the observations of most of the speakers confirmed his views. He did not, however, quite agree to what Dr. Smith had said about diagnosis. He (Dr. Finny) maintained that where the group of symptoms to which Addison had given a definite name, and which he recognised as a form of anæmia, presented themselves, they were justified in calling the symptoms by that name. In a great many cases of Addison's disease pigmentation of the skin was totally absent, and yet all the other pathological conditions of the disease were found in the patient during life. Against the absence of sickness of the stomach he put diarrhœa, which was a marked symptom in some cases of unmistakable Addison's disease, and was present in his patient.

The Society then adjourned.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

President—William Stokes, M.D., F.R.C.S.I.

Secretary—E. H. Bennett, M.D.

Sarcomatous Tumour of the Thigh.—The President said: This specimen was taken from a patient who is still under observation in the Richmond Hospital. It is the second of the kind he has had and that has come under my observation there. The first occurred four years ago. On the first occasion the patient was admitted into the hospital in consequence of an injury to his thigh—a blow—the result of which was the formation of a tumour for which he sought advice. On examination the tumour was found to be very soft and distinctly fluctuating. On questioning him we ascertained that it appeared almost immediately after the receipt of the injury. I looked on it as nothing of a more serious character than hæmorrhagic effusion, and kept him in bed for a few days, and applied cold applications. The tumour not disappearing, I laid it open and turned out a very large clot of blood. The cavity was washed out with a solution of chloride of zinc, and a drainage-tube inserted, and the wound entirely healed without suppuration. The patient shortly afterwards left the hospital quite free from inconvenience. He stated that he remained perfectly well for two years afterwards. At the end of that time he perceived an enlargement in precisely the situation where the original injury had been received. It was painless, did not interfere with his locomotion or work in any way, and in fact gave him no inconvenience whatever. He sought no advice, but went on with his usual avocations until the tumour reached the large dimensions of which this cast [exhibited] gives an idea. He would have continued longer without advice but that the integuments over the tumour gave way, and a fungus appeared which frequently bled. The loss of blood alarmed him and he sought advice. On examining the tumour we found that it was of the dimensions represented by the cast, and that the skin was tense and glistening and shining over the surface, with enormously large blue veins ramifying in every direction. It was of a solid nature, but was movable, so much so that I was quite satisfied that it was not connected with the bone. It was painless, and there was very little glandular enlargement in the groin. It was clear that we had to deal with a malignant tumour, and my colleagues and I thought the best chance for the patient would be to remove the limb at the hip-joint. This was accordingly done Monday last. On making a section of

the tumour we found that the consistency of it varied very much. The internal characteristics have, however, changed since the day of the operation. The varied character of the consistency, however, is still seen, some portions of it being dense and hard, while others are soft and brain-like. Some portions of it also are very bloodless, whilst others are quite the contrary, being very vascular. In the centre was a large cyst filled with blood, an incision through it showing a regular apoplectic deposit or clot of blood. A deeper incision showed that it was not connected with the bone or the periosteum, there being a distinct layer of muscular tissue between the bone and the tumour. Also it was not encapsuled, the disease seeming to ramify through the muscular tissue in every direction. There being no distinct capsule, any enucleation of the tumour would have been physically impossible. This I was pretty confident of before the operation, in consequence of observing an enlargement—which was more apparent then than now—over the anterior aspect of the thigh, and which both my colleagues and myself believed to be due to infiltration. Dr. Abraham has made a histological examination of the tumour, and informs me that it is an example of round-celled sarcoma. It is interesting not merely from its size and history, but from the fact that it is an example of this disease with distinctly traumatic origin. We are rarely able to trace such a tumour so distinctly to an injury. So far the case is progressing favourably.

Dr. Abraham said the microscopic characters of the tumour were those of round-celled sarcoma of a malignant character.

Note.—The account given by the patient was in one respect inaccurate. Some time after the first operation there was a recurrence of the disease, and the patient sought advice from another surgeon. An operation was performed, but the disease again recurred and at the same situation, and it was for the third manifestation of the disease that amputation at the hip was recommended and performed.—*December* 3, 1881.

Excision of the Fundus Uteri.—Dr. Atthill said: This is a specimen taken from the body of a woman who died in the Rotunda Hospital last Tuesday. She was aged about fifty-eight; had been a hard-working person all her life; was married, and had given birth to one child some twenty years before. She continued to enjoy very good health up to September, 1880, having ceased to menstruate about five years previously. In September, 1880, she perceived a small quantity of bloody discharge, for which she could not account, on her linen, but she had no pain. On the following day she had a profuse gush of blood, which was followed by the expulsion of some clots. From that day the discharge never entirely ceased. It was usually scanty, but was occasionally augmented by a sudden gush of blood, invariably followed by the expulsion of clots. She suffered no great pain, but began to feel very weak. She

lost flesh, and was easily tired, but kept at her work up to July, 1880. She now began to suffer from severe pain of a darting character, which commenced in the left inguinal region, apparently ran down the course of the Fallopian tube, and was felt severely in the groin. She also had extreme pain in the vagina. These pains came on in paroxysms and at almost regular intervals—namely, about two o'clock each afternoon, passing off gradually in the evening. They continued to increase in intensity and duration, and at the date of her admission did not pass off until quite late in the evening, unless relieved by a dose of morphia. The amount had to be increased until finally a grain had to be administered hypodermically in order to ensure relief. On examining her I found that the uterus was large, but perfectly movable, and the cervix healthy, and I concluded that the paroxysmal pains were caused by the efforts of the uterus to expel some mass—probably a small fibroid. I therefore dilated the uterus, but found nothing in it, but the mucous membrane seemed rough and uneven. I applied nitric acid, the effect of which was to make her a little easier for twelve hours, but afterwards all the bad symptoms returned. I now came to the conclusion that the fundus of the uterus was the seat of some form of malignant disease, the cervix being healthy—a condition so rare that I had only seen one previous example of it. The patient being worn out by the constant discharges and by pain, begged that something might be done for her. I told her that the only thing possible would be to remove the entire tumour by an operation which was exceedingly dangerous, but she preferred to run the risk of it rather than endure such constant pain any longer. Accordingly on Monday last I removed the fundus of the uterus by means of an abdominal incision. It was a very difficult operation. Subsequently on laying the uterus open we found the inner surface covered with a soft greenish slough which emitted a most fœtid odour. This appears to be epithelioma which has attacked the mucous membrane. It is separable from the tissue proper of the uterus. I fear I did not remove the whole of the disease, for it had extended into the portion of the cervix which had been left behind. The woman died in about thirty-six hours.

The *post mortem* examination revealed the following conditions:—There was considerable distension of the transverse colon. The mesenteric glands were very much enlarged; whether the enlargement is cancerous or not I cannot positively say. There are several bands of old adhesions in the right cæco-iliac region between the intestines. The sigmoid flexure is bound down by old disease. There was some sanguineous fluid in the cavity of the peritoneum. On the left side the intestines were covered with a deposit of recent lymph. The ovaries were quite atrophied. Some granular deposits and recent lymph were found over the surface of the left ovary. There was great thickening of the tissues

posterior to the uterus, which was very much congested. The stump of the uterus was adherent to some of the coils of the small intestine. The rectum, bladder, and liver were healthy. There were some signs of old disease of the lung, but these were not very important. We have before us the cervix uteri as it was ligatured during life. Both the cervix and the uterus appear to be perfectly healthy. I think, however, that the disease extended a little lower than my ligature, but it did not involve the cervix proper. The case is interesting both clinically and pathologically. The clinical lesson is that in future in such cases we must not be content with removing the fundus only, but must remove the entire uterus. The case is pathologically of much interest, in consequence of the extreme rarity of cancer attacking the body of the uterus, the cervix being healthy.

The PRESIDENT.—How long did she live?

DR. ATTHILL.—For about thirty-six hours after the operation. She gradually sank after the operation, although she bore it very well. She had no vomiting, but she never rallied perfectly. She was quite conscious and could speak, but remained in a semi-comatose state until death. I think the immediate cause of death was due to collapse. A certain amount of septic peritonitis had set in, but hardly sufficient to cause her death.

DR. WALTER SMITH observed that some months ago he showed a specimen taken from the body of a woman who had several abdominal tumours, which were diagnosed during life to be malignant. With respect to one of the tumours taken from the hypogastrium, the opinions of most of the members of the Society at first were that it was myoma of the uterus, but it was referred to the Committee of Morbid Growths, and they came to the conclusion that it was carcinomatous. In that case the disease was exclusively confined to the fundus of the uterus, and did not go near the os internum. His colleague, Dr. Purefoy, suspected the existence of cancerous disease of the body of the uterus during life, although the cervix was quite healthy.

DR. BENNETT remarked that from the examination made by Professor Purser it had appeared that the form of disease in this case was epithelioma. The case now before the Society clearly showed that the removal of the entire uterus was absolutely necessary, so as to avoid leaving behind anything that could become a source of septic peritonitis. If a diseased and putrescent pedicle were left behind it would be impossible to disinfect it.

DR. ATTHILL, in reply, said he did not think the case mentioned by Dr. Smith was analogous to his. In Dr. Smith's case there was well-marked cancer of other organs and a large mass growing from the outer surface of the uterus. In the present case there were no symptoms of cancer except the pain and the discharge.—*January* 21, 1882.

ST MARY'S HOSPITAL
RADFORD
LIBRARY
MANCHESTER

CLINICAL RECORDS.

Purulent Otitis Media, with Caries of portion of the Temporal Bone and Unilateral Facial Paresis. By Frederick A. Pope, M.B., Univ. Dubl.; Surgeon to the Dublin Throat and Ear Hospital.

Charles M., aged three years and two months, was brought to the Throat and Ear Hospital on March 5th, 1881, with profuse otorrhœa from the right ear, and well-marked right facial paralysis. The following information was derived from his mother's account:—The child had been healthy as an infant till the age of eleven months, from which period he suffered a great deal from "teething." At the age of one year and three months a purulent discharge was first noticed from the right external auditory meatus, and this has since continued. About fifteen months ago a swelling was observed behind the right auricle, and the child was taken to a general hospital for advice. It was proposed to incise the tumour, but this was not permitted, and the child was kept at home. Just after this the child's mother found that by making pressure behind the auricle matter was seen to well out from the meatus. From this period the otorrhœa continued, and in May, 1880, the child was brought for treatment to the Throat and Ear Hospital, and was seen by my colleague, Dr. Kendal Franks. He was suffering from profuse and fœtid otorrhœa of the right ear, and, the meatus having been cleansed with the syringe and warm water, several large polypoid growths were seen in the passage. These having been removed by the obtuse angular ring polypus forceps, a plug of absorbent cotton soaked in cold water was introduced. The mother was directed to syringe the meatus daily with warm water, and a small plug of absorbent cotton saturated with glycerine of carbolic acid or solution of salicylate of zinc (gr. iv. ad ʒi.) was frequently introduced. The case continued under observation for about six weeks, during which period the otorrhœa continued. The child then ceased to attend till March, 1881, when the case came under my care at the hospital. At this time there was profuse otorrhœa, the discharge being thick and purulent, and the face presenting a well-marked example of Bell's paralysis on the right side, which the child's mother had first noticed six months previously. The child had passed through measles, followed by pertussis, six months ago. I requested that the case should attend daily. The treatment now pursued consisted in the administration of cod-liver oil with Parrish's syrup, alternated with syrup of the lactophosphate of calcium, counter-irritation

by means of the liniment of iodine painted over the mastoid process, daily careful cleansing of the meatus by means of the syringe and a warm carbolic solution, and the introduction of plugs of absorbent cotton saturated with carbolic glycerine or solution of salicylate of zinc (gr. vj.—x. ad ʒi.). This course was steadily pursued, the child's general health improving considerably, whereas the otorrhœa diminished but slightly, and great fœtor was noticed from the more deeply-seated pus. I requested the child's mother to watch carefully when using the syringe for any particles that might come away from the meatus. Treatment was continued, the child being, as the mother informed me, "as lively as anything." On June 25th a vascular polypus was removed by Dr. Franks from the meatus. At this period I detected a bulging just behind the auricle, and observed, as I made pressure upon it, that thick pus welled into the meatus from its posterior wall. On the 3rd of July Dr. Franks made a free incision down to the bone, about one-third of an inch behind the auricle, but no pus appeared. A small vessel was divided by the incision, and the wound was plugged. A few days after a strong probe was pressed upon the bone at the bottom of the incision and into the mastoid cells. Pus at once appeared, and upon fitting a syringe closely into the external meatus, a stream of warm carbolised water was passed through the mastoid cells and flowed out by the incision behind the auricle. This treatment was daily pursued, the otorrhœa diminishing considerably. On the 30th of July a second small piece of bone came away from the meatus. Being absent from town during August and September, my colleague, Dr. Wallace Beatty, kindly took charge of the case for me. Some vomiting took place on September 5th with anorexia. The following day Dr. Beatty detected a large piece of loose bone behind the ear, and, having enlarged the existing aperture by a vertical incision upwards, he drew forth with a forceps a large piece of fœtid, necrosed bone, consisting of the greater part of the mastoid process, and a portion of the osseous canal of the external meatus. Warm carbolised water was now passed from the meatus through the wound, and the aperture plugged with cotton wool. The flow of pus now diminished greatly, and the child's health became excellent. On December the 5th a small fragment of bone was removed from the meatus. A slight amount of otorrhœa continued, and towards the close of December another fragment of bone was extracted from the meatus, and the passage was plugged to check a slight hæmorrhage which followed. The otorrhœa soon almost ceased, there being merely a very slight secretion of thin matter from the sinus. At present, January 14th, 1882, the child is in excellent health and spirits; the sinus remains open, but all the parts have a healthy aspect; the facial paralysis remains unaltered.

Wilde, in his "Aural Surgery," p. 422, remarks:—"The most frequent

complication and consequence of otorrhœa is caries;" and again, "Necrosis of the bony case of the ear is not an unfrequent and is always a dangerous attendant upon aural discharge." He also observes (page 423), "Instances of caries of the temporal bone producing death as the effects of otorrhœa might be multiplied without end;" and at page 398 he draws a graphic picture of the serious consequences likely to result in cases of long-neglected otorrhœa. He also states that instances of the loss of the whole or a portion of the mastoid process are by no means uncommon, and speaks of facial paralysis as a frequent result of otorrhœa and caries of the temporal bone, and he considers the paralysis in such cases due to an absolute lesion of the portio dura nerve from ulceration extending through the diseased aqueduct of Fallopius.

Mr. Toynbee ("Diseases of the Ear," page 301) draws attention to the rudimentary condition of the mastoid portion of the temporal bone in childhood, which at this period of life consists of cells horizontally situated and immediately adjacent to the tympanic cavity, and he points out how secretions—pus, mucus, &c.—are likely to lodge in the concavity of these horizontal cells, and by their retention to lead to serious results, unless a free outlet be afforded them by nature or by surgical intervention, since in all fatal cases of this nature the discharge has been deprived of a free egress. The same writer states that in the greater number of hospital patients with necrosis of the mastoid process which came under his notice the dead bone became detached before the membranes of the brain were affected, and he speaks of paralysis of the portio dura nerve as a not uncommon result of mastoid necrosis.

Von Tröltsch ("Surgical Diseases of the Ear," New Sydenham Society, Chap. X.) speaks of caries of the petrous bone as usually the result of neglected inflammation of the soft parts of the ear; and he observes, "There is perhaps no part of the human frame which in such a small space borders upon so many important organs as the tympanum, and in which, on anatomical grounds alone, we ought so much to watch for and dread suppurative inflammation of the soft and hard parts. Clinical experience, moreover, proves that caries of the ear very often leads to diseases dangerous to life, and not seldom to death." He says again, "The entire bony labyrinth will be thrown off in a state of necrosis with remarkable frequency, and a whole series of cases is recorded in which, after the removal of this part, the patients not only escaped with their lives but even recovered from the most varied general disturbances which had previously been present."

Mr. Dalby ("Diseases of the Ear," page 123), speaking on the subject of suppuration in the tympanic cavity, says, "A not uncommon complication is when purulent matter in the tympanum passes into the mastoid cells;" and again, "This, if neglected, may lead to a fatal result, but I hope to show that with proper care and well directed atten-

tion such a conclusion to cases of this sort may be avoided." Mr. Dalby then advises that when pain, redness, swelling, and pitting on pressure are discovered over the mastoid process, an incision should be made down to the bone to provide an exit for the pus contained in the cells, and speaks most favourably of the satisfactory results obtained by passing a stream of water through the meatus and tympanic cavity, the fluid passing into the mastoid cells, and flowing out by the counter-opening behind the ear. He remarks, "This is a very simple and, I submit, a very rational and successful way of managing what are generally very troublesome cases." He observes, in connexion with the subject of facial paralysis resulting from tympanic suppuration, "Where the disorganisation of the tympanum has gone to the extent of caries of the bone, it is not likely that recovery will take place, and, so far as I know, no case where this happened is on record;" and also, "Beyond the usual applications for the ear no treatment especially directed to the paralysis, so far as I know, is likely to be of any service in these cases."

RINGWORM.

The ointment of the oleate of copper, a new addition to the oleates, a beautiful green ointment having the same consistence as the benzoated oxide of zinc ointment, is recommended by Dr. Shoemaker as having a decided action in destroying the parasite of this disease. Each patch of the ringworm should have the ointment of the oleate of copper rubbed in thoroughly, night and morning. The oleic acid, in combination with the copper, has a more decided action in penetrating the hair follicles than any other remedy Dr. Shoemaker has ever before used to destroy the parasite.—*Medical Bulletin*, Feb., 1882.

TREATMENT OF FRACTURE OF THE CLAVICLE WITH SILVER SUTURES.

The unsatisfactory results which ordinarily follow treatment of fractures of the clavicle, in spite of the numerous forms of apparatus at the service of the surgeon, have led Dr. Langenbuch to attempt the above method. He reports the case of a boy, ten years of age, with a fracture between the middle and outer third of the left clavicle, which he treated by cutting down on the seat of fracture and suturing the ends of the broken bone accurately together with silver wire, and the periosteal sac with catgut sutures, the wires being so twisted that the ends could not perforate the skin; the wound was treated antiseptically, the arm being fixed by a Desault bandage. An ideal result is said to have been obtained.—*Deutsche med. Woch.*, Jan. 28, 1882; and *Med. News*, Feb. 25.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, M.D., F.K.Q.C.P.

Vital Statistics

Of the Eight Largest Towns in Ireland, for Four Weeks ending Saturday, February 25, 1882.

Towns	Population in 1881 (Unrevised)	Births Registered	Deaths Registered			Deaths from Zymotic Diseases							Deaths from Phthisis	Annual Rate of Mortality per 1,000 Inhabitants
			Total Number	Under 1 year	At 60 years and upwards	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhœa		
Dublin, -	348,525	816	945	182	181	–	134	7	3	4	18	7	100	35·3
Belfast, -	207,671	540	406	66	74	16	–	4	2	–	16	7	62	25·4
Cork, -	78,361	211	178	28	42	–	–	1	–	4	5	2	30	29·6
Limerick, -	38,600	100	103	20	34	–	–	7	–	–	2	6	15	34·7
Derry, -	28,947	71	40	8	7	–	–	–	1	–	–	–	3	18·0
Waterford,	22,401	51	40	9	8	2	–	-	–	1	–	–	3	23·2
Newry, -	14,782	31	22	3	3	–	–	5	2	–	–	1	5	19·4
Galway, -	14,621	39	35	14	7	–	–	–	-	–	2	–	5	31·1

Remarks.

A very high death-rate prevailed in Dublin, Limerick, Galway, and Cork. In Belfast and Waterford also the mortality was rather high; in Newry and Derry it was low. In twenty-eight large English towns the registered deaths were at the rate of 26·6 per 1,000 of the population annually. This high figure is largely accounted for by the fact that in London, which is included in these towns, the death-rate was as high as 29·4, owing to raw cold weather and stifling fogs in the beginning of February. In the sixteen principal town districts of Ireland the mortality was also at the rate of 29·4 per 1,000 per annum. In Edinburgh it was only 20·2; in Glasgow it was 25·7. Deducting the deaths of persons admitted into public institutions from localities outside the registration district, the death-rate within the Dublin registration district becomes 34·4, while within the municipal boundary of Dublin it is much higher—viz., 39·7 per 1,000. The deaths registered in the Dublin registration district were 945, or 5 more than those registered in the first four weeks of the year. They included 182 deaths of children under one year—19·3 per cent. of the total mortality, and an almost identical number—181—of persons aged 60 years or upwards.

In Dublin zymotic diseases caused 186 deaths, compared with an average of 161·9 in the corresponding period of the previous ten years. Measles was by far the most fatal of this class of maladies—the deaths from it being 134. The epidemic was, however, neither so prevalent nor so fatal as in the preceding four weeks, when 156 deaths were registered. Of the 134 fatal cases, 115 occurred in children under five years of age, including 21 infants under twelve months old. Only 10 of the 134 deaths took place in all the hospitals of Dublin. Smallpox and fever were rife and fatal in Belfast; scarlet fever continued to be fatal in Newry and Limerick. Smallpox caused 2 deaths in Waterford.

Phthisis was, as usual, very destructive to life in Dublin (100 deaths) and Belfast (62 deaths). It also caused 30 deaths in Cork, and 15 deaths in Limerick.

Diseases of the organs of respiration terminated fatally in 245 instances in Dublin—this number of deaths was equal to the average (245·2) of the preceding ten years, and includes 175 from bronchitis (average = 189·9) and 45 from pneumonia (average = 25·4). It will thus be seen that bronchitis was less fatal than usual, while pneumonia caused nearly double the average number of deaths.

On Saturday, February 25, the cases of epidemic diseases under treatment in the principal Dublin hospitals included—smallpox, 0; measles, 46; scarlet fever, 16; typhus, 25; typhoid, 8; pneumonia, 14.

The mean temperature of the four weeks was 44·9° in Dublin, 41·2° at Greenwich, and 43·1° in Edinburgh.

Meteorology.

Abstract of Observations made at Dublin, Lat. 53° 20′ *N., Long.* 6° 15′ *W., for the Month of February*, 1882.

Mean Height of Barometer,	30·117 inches.
Maximal Height of Barometer (on 19th at 10 30 p.m.),	30·870 ,,
Minimal Height of Barometer (on 26th at 4 p.m.),	28·836 ,,
Mean Dry-bulb Temperature,	45·9°.
Mean Wet-bulb Temperature,	43·7°.
Mean Dew-point Temperature,	41·3°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·263 inch.
Mean Humidity,	84·3 per cent.
Highest Temperature in Shade (on 25th),	57·9°.
Lowest Temperature in Shade (on 3rd),	34·1°.
Lowest Temperature on Grass (Radiation) (on 3rd),	30·1°.
Mean Amount of Cloud,	75·9 per cent.
Rainfall (on 16 days),	1·862 inches.
Greatest Daily Rainfall,	·860 inch.
General Directions of Wind,	W.S.W., S.S.W., S.

Remarks.

The leading characteristics of the month were singularly open weather, an absence of frost and snow, a high mean barometrical pressure, and a preponderance of winds from points between S. and W. The mean temperature in Dublin was 3° above the average for February in the preceding sixteen years. Two-thirds of the total rainfall fell on the last three days. On the morning of the 1st an anticyclone, with central readings as high as 30·90 inches, lay over Denmark and North Germany. On the 5th this high pressure system extended over the British Isles and France. Calms and dense fogs with low night temperatures were reported from the inland parts of England, while light S. to W. winds, accompanied with very mild weather, were blowing in Ireland and Scotland. After the 8th the anticyclone gradually retreated eastwards, and the barometer gave way with freshening southerly winds and showery mild weather. About this time (Saturday, the 11th) a series of deep atmospherical depressions with subsidiary bourrasques began to cross Scotland and Scandinavia, travelling eastwards; pressure meanwhile remained high over France, so that very strong westerly winds and frequent showers of rain and hail with some sharp and sudden variations of temperature were experienced. Lightning was seen in Scotland and the North of Ireland on the nights of the 13th and 14th. On the 19th another change came, as an anticyclone, in which the barometer again rose to 30·90 inches, advanced to the South of Ireland in the rear of a deep depression. At 8 a.m. of this day the barometer read 28·79 inches at Stockholm, and 30·82 inches at Valencia, in Kerry. Twenty-four hours later the reading was 30·93 inches at Roche's Point, near Queenstown. On the night of the 20th a brilliant aurora borealis was seen in parts of Scotland and in Scandinavia. The area of high barometer in the S.W. and S. now began to break up by degrees, and after the 25th a remarkable trough of low pressure extended across the British Isles and the North Sea to the Baltic. North of the centre of depression strong easterly winds with bitter cold set in; south of the centre S.W. or W. gales and heavy rains prevailed. In Dublin the range of the barometer during the month was very great, exceeding 2 inches. Hail fell on the 15th and 18th. The atmosphere was foggy on the 2nd, 4th, 5th, 6th, 7th, 10th, and 24th. A lunar halo was visible at 6 30 p.m. of the 1st, and lunar coronæ were frequently seen on the evening of the 27th. From the 2nd to the 8th inclusive stifling fogs prevailed in London—the fog of the afternoon and evening of the 4th being specially memorable for its extraordinary density.

PERISCOPE.

Edited by G. F. Duffey, M.D., F.K.Q.C.P.

HYSTERO-EPILEPSY.

In an elaborate and illustrated paper in the October number of the *American Journal of the Medical Sciences*, Dr. Chas. K. Mills, Lecturer on Mental Diseases and Electro-Therapeutics in the University of Pennsylvania, reports a number of interesting and important observations upon two original cases of hystero-epilepsy or hysteria major of Charcot. Following these cases the author considers at some length the phenomena of the attack, and compares the description given by the French writers with the clinical histories of his original cases, showing a remarkable correspondence between the phenomena presented. The attack of hystero-epilepsy is always preceded, sometimes for several days, by prodromata, which are often numerous and varied, embracing trouble of all parts of the economy. Dr. Mills, following the lead of Richet, studies them mainly under four heads—namely: (1.) Psychical manifestations, hallucinations. (2.) Affections of the organic functions. (3.) Affections of motility. (4.) Affections of sensibility. The analysis of these symptoms is very interesting, especially since they include the discussion of the "epileptogenic zones" of Brown-Séquard, something analogous to which appears in hystero-epilepsy, and which in this paper are shown by diagrams. The stage of invasion being over, the attack itself has likewise been divided into four distinct periods: (1.) Epileptoid. (2.) Great contortions. (3.) Emotional attitudes. (4.) Delirium. Some of which, according to Richet, admit of subdivisions into phases; modifications also may occur. Besides these great attacks and their numerous varieties, grave hysteria counts among its manifestations phenomena which merit the name of permanent symptoms. The most striking of these are the troubles of sensibility, such as anæsthesia, hyperæsthesia, &c., the affections of motility, such as paralysis, contracture, common chorea, and rhythmical chorea. They also include disorders of secretion, such as anuria, vomiting, and hæmatidrosis; troubles of nutrition, such as result from prolonged abstinence; and disturbances of circulation, such as flushing, urticaria, stigmata, or ecchymoses, &c. As regards the intellectual faculties it is observed that they are not materially affected even after years; the prognosis, therefore, is far less grave in this respect than in epilepsy proper. In the treatment, which is carefully studied by Dr. Mills, galvanism occupies a prominent

place, both in the attack and in the interval. In France the hydrotherapeutic method of treatment has been found of the greatest service. Ovarian compression, inhalation of chloroform or ether, or hypodermic injections of morphia, and electricity are employed during the attack. Subsequently metallotherapy externally and internally, applications of magnets, static electricity, or weak galvanic currents, and other remedies have been used with varying results, but the author properly adds that "good hygienic influences, moral, mental, and physical, are of the utmost importance." This extremely interesting article is very freely illustrated by striking original designs and diagrams which add much to its value and which correspond very closely with the very graphic descriptions of cases—cases which form the modern representatives of the ancient convulsionnaires and ecstatics, and of those recorded as occurring in the epidemic chorea of the middle ages, the epidemics of demoniacal possession, and in the ancient convulsive epidemics.

A NEW PARASITICIDE.

At the American Hospital for Skin Diseases, chlorinated oil, a yellowish oily fluid, prepared by passing chlorine gas into olive oil, has been found to be a most decided parasiticide, more particularly in scabies. In this affection a piece of cotton is saturated with the chlorinated oil and applied night and morning. The preparation is also used in other cutaneous diseases.—*Medical Bulletin*, Feb., 1882.

PATHOLOGICAL ANATOMY OF THE SPINAL CORD IN PHOSPHORUS POISONING.

M. S. Danielo, from researches on this subject, gives the following *résumé* of his conclusions:—1. The alterations of the spinal cord in phosphorus poisoning are of the nature of a myelitis, whether central (peri-ependymal) or diffuse. 2. In acute cases, deposits of blood pigment, noticed for the first time by the author, occur in the central nervous system. 3. Large doses of phosphorus cause a central myelitis through the whole extent of the cord, with the formation of blood extravasation and deposits of pigment. Smaller doses, frequently repeated, produce a diffuse myelitis involving both the grey and white matter. 4. By means of phosphorus, therefore, an inflammatory irritation either of the nature of a diffuse myelitis, occupying both the grey and white matter, or an inflammation confined to the grey matter, may be produced at will. 5. The nervous phenomena observed during life may be attributed to one or the other of these forms of spinal inflammation.—*Bull. Gén. de Thérapeutique*, Jan. 15, 1882; and *Med. News*, Feb. 25.

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

MAY 1, 1882.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XVII.—*On the Excretion of Nitrogen by the Skin.*[a] By J. BYRNE POWER, L.K.Q.C.P.I.; Physician, St. Michael's Hospital; Medical Superintendent Officer of Health, Kingstown, &c.

DURING the years 1877–78, I conducted a series of experiments on the excretion of nitrogen by the skin. Some of the data then obtained were communicated at the Dublin Meeting of the British Association, but I have since extended the inquiry, and now beg to submit an account of the investigations.

The results obtained by various experiments as to the existence of nitrogen in the sweat have been contradictory. Voit,[b] Ranke,[b] Parkes,[c] and others, relying on indirect methods, have denied its existence, finding that the quantity excreted by the kidneys and intestinal tract was equal to, and in some cases even exceeded, that ingested, therefore leaving no room for any excretion by the skin.

On the other hand, Anselmius,[d] Berzelius,[e] Favre,[f] Funke,[g] and

[a] Read before the Royal Society, February, 1882.

[b] Schmidt's Jahrb., Bd. CXVII., pp. 1–10. Voit made further experiments on doves with confirmatory results. On the other hand, Seegen and Nowak made subsequent experiments upon dogs with opposite results; these again are contravened by Gruber (Virchow and Hirsch), Jahrgang, Bd. I., 1881, p. 163). I do not myself believe that experiments on the lower animals are conclusive on this point in human physiology.

[c] The Lancet. 1871. Vol. I., p. 400.

[d] Berzelius, Traité de Chimie. Traduit par M. Esslenger. Tom. VII., p. 32. Paris. 1833.

[e] Op. cit., p. 325.

[f] Archiv Gén. de Méd. 1853. Tom. II., pp. 1–20.

[g] Beiträge zur Kenntniss der Schweissecretion. Moleschott's Untersuchungen zur Naturlehre.

others who have analysed portions of the sweat collected by different methods have found nitrogen, though Schotten and Ranke failed to do so. Funke, by his experiments upon himself and his two pupils, published in 1858, not only found nitrogen in the sweat, but also proved its existence as urea, and was the first to make an estimation of the quantity excreted by the skin of the entire body in a given time. Adopting Schotten's method, he collected, by means of a caoutchouc sleeve, the sweat excreted by the arm in a given time, and, having filtered, he estimated the quantity of nitrogen present by the combustion process. Then, having established by measurement a ratio between the superficies of the arm and that of the entire body, he calculated the entire cutaneous excretion. Dr. Fleming,[a] adopting the same method, arrived at almost identical results. I may add that Dr. Fleming's experiments were made subsequently to mine.

In addition to the unsatisfactory character of all indirect proofs, the investigations of Voit, Ranke,[b] Parkes, and others seem liable to a further objection, arising from the extreme difficulty of ascertaining the exact quantity of nitrogen ingested. Again, as already noted by Parkes, the amount of nitrogen excreted, due to waste of animal tissue during the experiment, cannot be determined. These objections seemed to me to make such negative results of doubtful value upon this point, and Professor Parkes' conclusion that, "apart from detached skin structures the balance of evidence is against the passage of nitrogenous substances by the human skin," to my mind, at least, required confirmation.

As regards the direct evidence of nitrogen in the sweat the researches of Funke, confirmatory of those of Anselmius, Berzelius, Favre, and others seemed to me to be conclusive on the point. Funke's method is the only one by means of which an estimation of the entire cutaneous excretion in a given time has been made, and it alone required re-examination. Funke's method seemed to me to be open to the following amongst other objections: first, the uncertainty attaching to the relative measurement of the superficies of the arm and that of the entire body; secondly, that arising from the two underlying assumptions—(*a*) assumed equality of secretive power of rest of body to that of arm, (*b*) assumed identity of chemical composition of sweat from the arm with that excreted

[a] Journ. Anat. and Physiol. Vol. XIII., p. 454.

[b] Ranke, as above alluded, endeavoured to obtain nitrogen directly by analysis of the sweat, and failed to do so, but seems to have mainly relied on the indirect argument.

from the rest of the body. Considering these grave objections to Funke's method, and the general uncertainty as to any nitrogen being excreted by the skin, I determined, if possible, to ascertain the quantity of nitrogen excreted by the entire skin in a given time without reference to measurement or actual amount of fluid sweat excreted.

I shall now briefly state the mode of collecting the excretion which I adopted, having first tested the atmosphere of the ward in which I was about to operate, to ascertain that it did not contain free ammonia in any quantity. I placed upon one of my hospital beds an india-rubber sheet, and over it another sheet of pure linen, upon which lay the person experimented on. Over his body was placed a wooden cradle or canopy, covered outside with a thick felt, and lined inside with linen, which coverings were to be carefully adjusted round his neck. To raise the temperature within the canopy I used the lamp-furnace invented by the late Surgeon-Major Wyatt, the flue from which fitted accurately through a hole in the coverings guarded by a wooden ring. Considering the spirit lamp of Wyatt's furnace objectionable for many reasons, I substituted a Bunsen gas burner. To insure the regular renewal of the air within the canopy, and to prevent its saturation, as well as to collect any free ammonia which might be evolved, I introduced a tube leading from a Bunsen air-pump, which tube was connected with two glass towers filled with large glass beads, and charged with half an ounce of dilute hydrochloric acid of known strength. Through another hole in the canopy I introduced a hygrometer, by which I was enabled to observe the temperature, and calculate the degree of saturation of the atmosphere within. As the gas, water, and reagents employed contained some small portion of nitrogen, my first task was to ascertain the constant error arising from this source. To effect this I performed three blank experiments, omitting only the introduction of the person to be experimented upon. The result was that I obtained a small quantity of nitrogen, nearly equal in each case—viz., 0·066, 0·066, and 0·061, and having a mean value of 0·064 grm., that being the total amount collected in one hour under the experimental conditions. The water I used was Vartry water, it being the water supply to my hospital, and when I used it unfiltered I employed the above number as a constant. As it would be necessary when I wished to get rid of epithelium to filter the portion of the bath water I took for analysis, I made

three similar blank experiments, using filtered Vartry water, and obtained another constant, amounting to 0·0408 grm. of nitrogen, which I used in all such experiments. The method employed for estimating the nitrogen will be described later on. In the nine experiments in which I estimated the chlorides I took the precaution of finding the amounts of chlorides present in the Vartry water on that day, as I found the quantity of chlorides present in it liable to periodic variations.

I now commenced a series of experiments upon myself, with the assistance of my clinical clerk, Mr. Clune. One of these I shall describe. I first took a sponge bath for the purpose of removing loose epithelial scales, as well as minute fibres from the underclothing, which I always found adhering to the skin, and having noted my pulse, respiration, bodily weight, and temperature, I entered under the canopy.[a] The coverings being carefully adjusted round my neck, the gas furnace was lighted, the air-pump and hygrometer adjusted, and the experiment continued for an hour, the time being carefully noted. Before leaving the canopy the pulse, respiration, and bodily temperature were again noted, also the mean temperature and point of saturation of the atmosphere within the canopy. On leaving the canopy I got into a bath containing twenty litres of Vartry water, acidulated with half an ounce of the dilute hydrochloric acid of known strength. I took with me into the bath the linen sheet upon which I had lain whilst under the canopy, and with it I gently rubbed myself so as to remove any loose epithelial scales. On leaving the bath I again weighed myself, and in twenty minutes after I again noted my pulse, respiration, and bodily temperature. I caused the linen and india-rubber sheets, as well as the towers containing the dilute hydrochloric acid, to be washed in the water of the bath, and then brought a specimen of it to my laboratory for analysis. On two occasions I analysed the contents of the towers separately and got hardly a trace of ammonia with Nessler's test, proving, in these instances, at least, that free ammonia was not given off by the skin.

[a] In my communication to the British Association, I gave the results of my observations on the effect of the hot air bath upon the rate of the pulse and respiration and on bodily temperature. I have since seen papers by Dr. Fleming, *op cit.*, and Dr. C. Lange (Archives Gén. de Méd., tom. I., 1880, p. 150), on the physiology of the Turkish bath, which go more fully into the immediate effects of artificially increased temperature upon the human body than I did, and I find that their results are confirmatory of my own.

The process of analysis of the water which I employed was briefly as follows:—I carefully measured 100 cub. centims. and poured it into a fractional distillation flask, which I altered to suit my purpose by shortening and bending the side tube upwards towards the mouth. I now took a porcelain dish, in which I placed a small quantity of pure sand, carefully cleansed by hydrochloric acid and subsequent washing with distilled water, and moistened it with a drop of strong, and ammonia-free, sulphuric acid. Having placed the dish upon a water-bath, I inverted the flask into it, and, properly suspending it, carefully evaporated the water as it gradually flowed into the dish. When nearly dry I removed the sand from the dish and mixed it with soda-lime, in a small combustion tube, and proceeded to estimate the quantity of nitrogen contained in the residue in the manner referred to in a former paper.[a] Hence I calculated the quantity contained in the twenty litres, and from this I deducted my constant, thus ascertaining the total quantity of nitrogen excreted by the skin during the experiment. I have described an experiment in detail, as all the others were conducted in a similar manner. But in some instances I also filtered the aliquot part of the bath-water in order to get rid of epithelium, and then estimated the nitrogen in 100 cub. centims. of the filtrate; the result gave me the soluble nitrogen, *i.e.*, nitrogen present in some soluble compound, and the difference between this value and that afforded by the fluid containing suspended epithelium gave me the weight of the nitrogen present in the insoluble condition in the same portion of the bath-water. In the tabular statement I have noted the instances in which this additional estimation was made. I may here note that I examined the deposit from the water of the bath under the microscope, and found it to contain scarcely a trace of anything but epithelial scales.

Funke, by the only two completed analyses which he made, found in one case 0·198 grm., and in another 0·2935 grm., of soluble nitrogen excreted by the entire skin in one hour. But it must be remembered, as I have already pointed out, that his numbers are calculated values from imperfect data, and are not the results of direct determinations of the quantities excreted by the entire body in a given time.

[a] Dublin Journal of Medical Science. February, 1875. Vol. LIX., No. 38, p. 81.

ST MARY'S HOSPITAL RADFORD LIBRARY

Table.

Reference to Case	No. of Experiment	Period of Year	Duration of Experiment	Average Temperature of Bath	Weight of Body	Age	Average Renal Excretion of Nitrogen during experimental period	Cutaneous Excretion			Remarks
								Total Nitrogen	Soluble Nitrogen *	Insoluble Nitrogen †	Chlorine in terms of NaCl	
			H. M.	Fahr.	Lbs.		Grms.					
A	1	July	1 0	Not accurately observed, about 120°.	124	40	11·93	0·048	0·039	0·009	—	Healthy subject.
	2	„	1 0		—	—	—	0·112	—	—	—	
	3	„	1 30		—	—	—	0·128	—	—	—	
	4	„	1 0		—	—	—	0·096	—	—	—	
	5	„	1 0		—	—	—	0·132	—	—	—	
	6	„	1 0		—	—	—	0·128	0·091	0·037	—	
	7	„ *a*	0 45		—	—	—	0·080	—	—	—	*a*. Experiments 6 and 7 made on the same day.
	8	„	1 0		—	—	—	0·096	0·055	0·041	—	
	9	„ *b*	1 0		—	—	—	0·128	0·071	0·058	—	*b*. Experiments 8 and 9 made on the same day.
B	1	Aug.	1 0	124	155	43	—	0·336	0·2392	0·0968	—	Bright's disease, chronic, dropsical, sweating easily produced.
	2	„	1 0	127	—	—	—	0·336	0·1792	0·4568	—	
	3	„	1 0	118	—	—	—	0·116	0·052	0·064	—	
	4	„	1 0	123	—	—	—	0·256	0·1192	0·1368	—	
C	1	Jan.	1 10	131	161	21	19·3	0·128	0·039	0·089	—	Catarrh, urine loaded with lithates, otherwise healthy.
	2	„	1 10	142	—	—	—	0·160	—	—	—	
	3	„	1 0	125	—	—	—	0·176	—	—	—	
D	1	Nov.	1 0	139	142	60	—	0·160	0·1292	0·0308	1·25	Gout, convalescent.
	2	„	1 0	146	—	—	—	0·262	0·1672	0·0948	1·65	
F	1	Jan.	1 30	135	110	16	—	0·072	—	—	0·33	Sub-acute rheumatism, sweating difficult to produce.
	2	„	1 10	139	—	—	—	0·056	—	—	0·52	
	3	„	1 15	139	—	—	—	0·106	—	—	0·39	
	4	„	1 30	143	—	—	—	0·075	0·0472	0·0278	0·52	
	5	„	1 15	149	—	—	—	0·086	—	—	0·62	
J	1	Dec.	1 15	120	162	40	§ 6·92	0·1425	0·125	0·017	1·26	Acute nephritis.
	2	„	1 25	135	—	—	—	0·125	0·096	0·029	1·00	

* *I.e.*, nitrogen present in some soluble compound—*e.g.*, urea, &c. † *I.e.*, nitrogen present in some insoluble compound—*e.g.*, epithelium. § Less nitrogen as albumin.

In the accompanying table I give the results of twenty-five experiments upon six different individuals—viz., two healthy subjects and four hospital patients; cases which I considered suitable for treatment by the hot air bath. It will be seen that the greatest quantity of soluble nitrogen which I find to be excreted by the entire skin, in a case of Bright's disease (B) is 0·2392 grm. per hour. In experiment 1, case A (a healthy subject), we find that the quantity of soluble nitrogen excreted per hour is as low as 0·038 grm. And I find that the mean result of all my direct experiments, upon healthy and unhealthy subjects, gives 0·0824 grm. of soluble nitrogen collected from the entire skin in one hour. The difference between Funke's and my results may be in part due to the circumstance that my experiments were made upon the body in a state of rest, while Funke's were made under conditions of violent exercise, which I, accepting the views of Liebig, so strongly supported by the more recent ones of Professor Flint,[a] believe to be always accompanied by waste of animal tissue and consequent increased excretion of nitrogen. With regard to Funke's estimation of the *possible* excretion of nitrogen per diem, amounting to as much as from 4·76 to 7·045 grms., I believe it to be excessive. He arrives at these results by multiplying the quantity obtained in an hour by twenty-four, necessarily assuming the constancy of the sweat secretion, which assumption is contradictory to the statement made in another part of his paper, to the effect that "in one or two hours the quantity of the supply begins to diminish, even though the temperature and movement remain unaltered, and falls to such a minimum that one can scarcely perceive the increase even during greater intervals of time."

I believe that under ordinary circumstances the excretion of nitrogen by the skin is very small indeed, even in cases of gout (Case D) and Bright's disease (Case B), in which I expected to find it present in larger amount. This being so I can now well understand how it was that Voit, Ranke, and Parkes, by their indirect methods, came to the conclusion that there was *no* such excretion, yet I do not deny that under extraordinary circumstances, such as those mentioned by Leube,[b] Deininger,[c] Kaup and Jurgensen,[d] Taylor,[e] Schotten,[f] and others, crystals of urea may have

[a] American Journ. Med. Science. Vol. LXIII., n. s., p. 163.

[b] Deutches Archiv für klinische Medicin. Bd. VII., p. 1.

[c] Id Bd. VII., p. 587. [d] Id. Bd. VI., p. 55. [e] Op. cit.

[f] Schotten, though he failed to find nitrogen in normal sweat as mentioned, succeeded afterwards in doing so in a case of renal disease (Schmidt's Jahrb. Bd. 74, s. 9).

been found upon the skin. However, with the exception of the case of Leube there does not appear sufficient evidence that adequate care was taken to ascertain that the crystals found were really those of urea and not of other salts, such as sodium chloride, crystals of which, as is well known, frequently simulate other bodies. I find that Leube notices this as an objection to the researches of former experimenters, and to obviate it he treated the mass removed from the skin with baryta-water and absolute alcohol in the usual manner, and so undoubtedly proved the presence of urea. Dr. Taylor seems also to have proved the presence of urea in the "saline mass" removed from the skin in a case of uræmic poisoning. Owing, I presume, to the smallness of the quantities obtained, none of the above-named experimenters give the quantity of the saline matter, nor the amount of urea found in it, with the exception of Kaup and Jurgensen, who state that they obtained 8·4 grms. from the shirt worn by a choleraic patient. My method of collecting the cutaneous excretion afforded me an easy means of ascertaining the quantity of sodium chloride excreted, and in the table will be found the quantities obtained in nine experiments. In five of these the amount excreted can be compared with that of soluble nitrogen, and it will be seen that the quantity of sodium chloride is comparatively great, the proportion to nitrogen, which is nearly constant, being as 10 : 1.

In conclusion, I would observe that though I found nitrogen to be excreted by the skin in all cases, yet the quantities are so small that I do not believe the cutaneous excretion can ever act vicariously of the renal to any appreciable extent. I now submit this paper in the hope that some one having more leisure and more ample resources at his command may further prosecute the inquiry.

ART. XVIII.—*On Dermoid Cysts, especially those of the Ovary.*[a] By FREDERICK WILLIAM ELSNER, Licentiate in Medicine and Midwifery, King and Queen's College of Physicians in Ireland.

THE comparatively rare occurrence of dermoid ovarian cysts[b] and the difficulties which beset their diagnosis have induced me to present a detailed account of a case which was lately reported to

[a] Read before the University of Dublin Biological Association, February 17, 1882.

[b] Kohlrausch. Müller's Archiv. 1843. P. 365 (the first case on record).

the Pathological Society of Dublin, and for which I am indebted to the kindness of Dr. Purefoy, Obstetric Physician to the Adelaide Hospital, under whose care the patient had been for some time prior to death. As far as I can make out from the literature of the subject at my command there are only very few similar cases *recorded* in British journals of medicine, and these seem to have been but imperfectly diagnosed, and their existence to have given rise to great speculation as to their nature and probable *raison d'être*. This, however, is due rather to the very scanty information afforded by pathological works on this particular subject than to a wish on the part of the observers to describe sensational cases. Thus, we find a short article in Wilks & Moxon's Pathological Anatomy on "Piliferous Cysts." MacEwen has lately described them in the scrotum and testicle. A few scattered cases are reported in the journals (all of old date),[a] in which the describers use the terms "pilous nævi," "fœtal remains," "abscess containing hairs," &c., just as they think fit; and a more detailed description is found in Mr. Spencer Wells' work,[b] in which, however, more stress is laid on the operative value which dermoid ovarian cysts possess over simple or proliferating ones. But a complete history of the pathology and development of dermoid growths in the whole body is hardly presented at all, if we except the rather mixed accounts which are to be found in Paget's Surgical Pathology, Vol. II., pp. 85–90. Erichsen,[c] it is true, has classified dermoid cysts under the heading "Cysts that result from the new formation of a closed cyst and the distension of it by the secretion of its lining membrane"—a truly formidable definition. Such cysts he afterwards subdivides into four classes, of which dermoids are Class *a*; and they are again divided into three subclasses—superfluously, as I hope to be able to prove.

I will now leave the literature of this interesting subject for a moment whilst I relate the history of the patient whose case I

[a] Lee, Med. Times and Gazette, Vol. I., 1860, pp. 302, 326. Salter, Medico-Chirurgical Review, Vol. I., 1861, p. 338. Coward, Lancet, Vol. I., 1856, p. 286. Griffiths, Lancet, Vol. II., 1876, p. 750. Gordon, "Mediastinal Dermoid," Med. Chir. Trans., Vol. XII. Foot, Dublin Quarterly Jour., Vol. XXXVI., 1863. Aitken, Edinburgh Med. Jour., Aug., 1868. Keith, Edinburgh Med. Jour., Nov., Dec., 1867. Keith, Lancet, 1872, p. 703. Brabazon, Dublin Quarterly Jour., May, 1849. Salter, Guy's Hospital Reports, London, 1860. Gray, Med. Chir. Trans., Vol. XXXVI., 1853; and Lancet, Aug. 27, 1853. M'Dowell, London Med. Gaz., Vol. XXXV., p. 746.

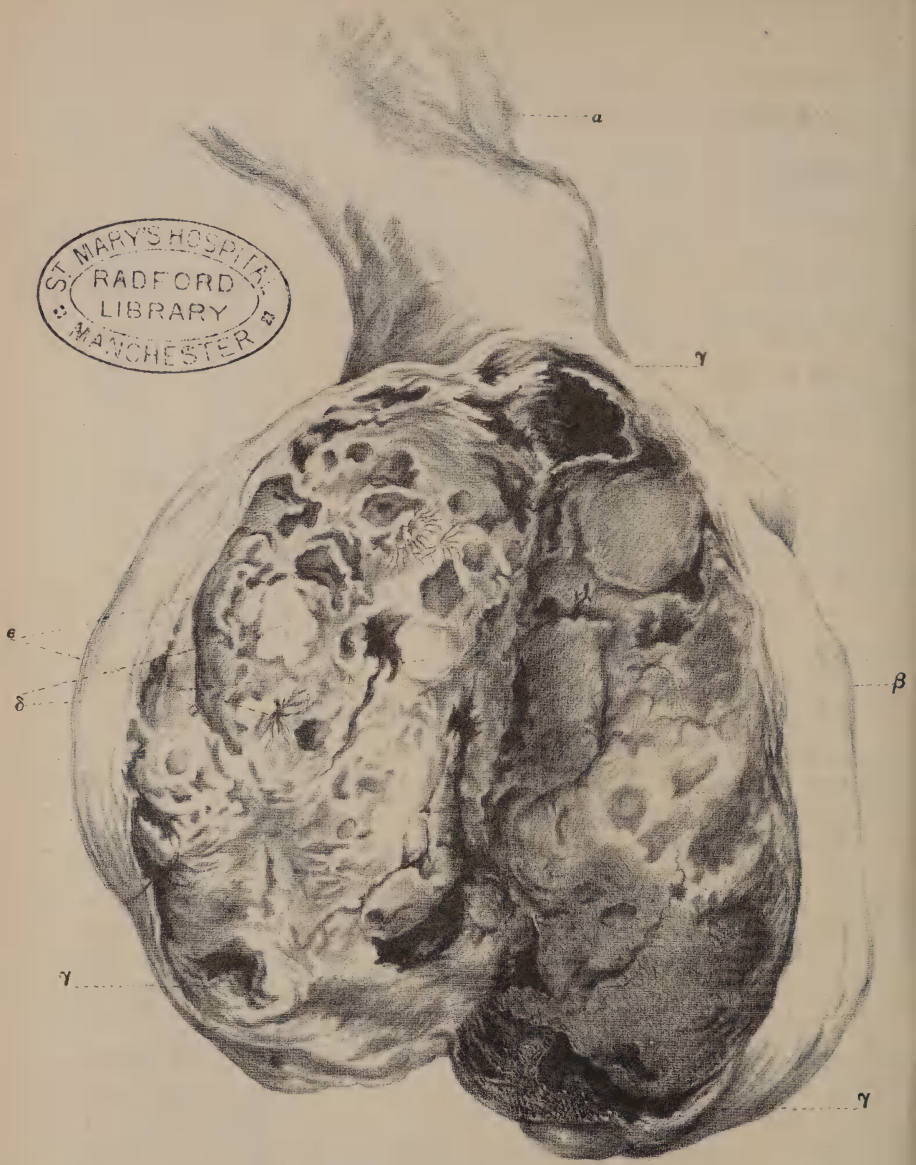
[b] Wells. Diseases of the Ovaries. 1872.

[c] Science and Art of Surgery. Vol. I. P. 742.

wish to submit. I will observe, in passing, that the size of the tumour, before immersion in spirit and division, exceeded by one and a-half times that of a man's head (the largest standard allowed in any pathological work), a circumstance which may, in this respect, even enhance its interest :—

H. E., aged sixteen, admitted to the Adelaide Hospital, July 28th, 1881, suffering from dyspnœa on the slightest exertion and inability to sleep in any position save the almost upright one, the period of commencement of these troubles dating back only three or four weeks. She was a thin, delicate-looking girl, and presented the appearance of a woman in about the seventh month of pregnancy, the abdomen being very tense and protruding. Her mother informed the staff that a tumour had always been present—at least it had been observed only within the last three years, since which she had begun to menstruate; before that the swelling had never caused the slightest inconvenience. Patient was at first placed under the care of Dr. Walter Smith, who handed her over to Dr. Purefoy on the diagnosis of an ovarian cyst having been made. At this time she also had intense cramping pains in the legs, but was quite well able to walk about the wards until she one day slipped and fell on her side, after which she took to her bed and never rose again. She had been about ten days in hospital, and the necessity of operation had been frequently urged upon both herself and friends, without, however, having the slightest effect on either her or them, even after the fall had complicated matters, for she now lost complete control over her lower extremities, suffered from constant pain, with retention of urine and fæces, and had an attack of very well-marked malarial fever, it being ascertained that both her parents had suffered from it during a sojourn in America before her birth. She was placed on the quinia and hydrobromic acid mixture, got beef-tea and stimulants of various kinds; the catheter was passed twice daily, and the hypodermic injection of morphia resorted to when the pain was very severe. Fluctuation was palpable over the abdomen, which seemed enormously distended; there was hyperæsthesia of the extremities, but loss of motion, and she could now only rest almost doubled up in a sitting posture, her arms clasped round her knees, and these drawn up to her chin; she cried out almost incessantly because of the pain. Twenty-four hours before her death the ague-fit had just ceased when vomiting set in, and continued incessantly up to her demise, no remedy availing in its treatment. The peculiarity of the ague-fit was the profound state of collapse into which the patient fell after the first rigor, so much so that it was believed she was moribund, as the heart-sounds had disappeared; but the hypodermic injection of sulphuric ether, sinapisms to the epigastrium and calves of the legs, roused her again, whereupon the sweating stage followed. The repeti-

ST MARY'S HOSPITAL
RADFORD
LIBRARY
MANCHESTER



AN OVARIAN DERMOID CYST.

a. Uterus, distorted and small.

β. Cyst-wall, which at the points γ is dilated into a large pus-containing cavity, now collapsed.

δ. Cartilage.

ϵ. Hairs.

Lithographed by John Falconer, Dublin. *From an Original Drawing*

tion of these phenomena throughout the day and evening caused the recognition of the attack and inquiries to be made of the mother, who was in constant attendance. A large bedsore had formed over the sacrum and extended down to the buttocks, and, notwithstanding all endeavours to relieve the pressure, it was found impossible to do so, as her cramped position rendered all assistance abortive. She died, utterly exhausted, on the 16th of August, 1881.

The autopsy of the thoracic viscera revealed nothing characteristic—not so, however, as regards the abdomen; it was filled with a yellowish fœtid fluid; there were evidences of recent peritonitis, and an enormous tumour filled up the true pelvis and pressed on its brim. On raising the mass an opening was found from which this fluid was exuding, and this led into a cavity capable of holding about two quarts of fluid, but which was now considerably collapsed. The tumour was found to be growing from the left ovary, to have contracted adhesions to the broad ligament, to have pressed the intestines upwards against the diaphragm and the bladder (which was small and hypertrophied), and the rectum downwards against the bony boundaries of the pelvis, thus giving rise to the symptoms described. On section the tumour presented many loculi containing detritus and fluid; hairs are visible, and fibrous tissue, with a substance which is true cartilage embedded in it. The wall was thick and elevated from its contents at the upper part to form the large sac, the rupture of which caused the death of the poor girl. By the kindness of Mr. Abraham, Curator of the Museum of the Royal College of Surgeons, I have been enabled to exhibit this tumour and the microscopical sections made of its wall by him, as it was delivered into his hands for the Museum[a] almost immediately after the *post mortem*. These sections showed the tumour to be a true dermoid cyst of the ovary, containing all the elements of the true skin and quantities of fibrous tissue, fat and fatty tissue, cartilage and sebaceous matter, with spicula of bone here and there. Examination of the spinal cord revealed nothing except slight hyperæmia of the gray matter. There was no softening or meningitis.

The history of this case is most instructive and important, inasmuch as there are several points bearing directly on the theory of development, which will be reverted to later on. A summary of the case reduces it to one of the simplest kind—namely, a girl with a congenital tumour, dormant until puberty; then, with the increased vascularisation consequent on the establishment of the menstrual function, the tumour taking on sudden and rapid growth, until, by an accident (the fall in the ward), it became twisted on its pedicle, œdema and suppuration following, causing

[a] The drawing of the tumour which accompanies this paper was only recently made, and is half the natural size.

still greater distension, with pressure symptoms; lastly, rupture, followed by peritonitis and death—add to these the gangrenous bed-sore, an ague fit, loss of rest and appetite for many days, and you have a picture of such misery and prostration as could terminate only in death. Taken at the beginning of its increase in size (as it would have been had consent been given), this tumour would have been a most favourable one for the operation of ovariotomy, as subsequent events proved; but it is still seldom that a case terminates in a manner like this, showing so thoroughly the dangers of procrastination, and how a growth which may be taken as one of the most innocent of all tumours can under certain circumstances become as dangerous as the most malignant—in fact, more rapid in its influence on life than even these. Spencer Wells' mortality of 25 per cent. in ovariotomies sank to 10 per cent. when the cases of dermoids were taken separately, showing that there is certainly a more favourable prognosis, although the number of cases in which ovarian cysts are found to be of this nature is excessively small, and can consequently be hardly taken as a criterion of the relative risk of operation.[a] As regards the amount of inconvenience caused by such a tumour, it may exist for many years without causing any, or it may (as in the case related) become even dangerous to life in a short time. Olshausen[b] lays particular stress upon the fact that ovarian dermoids are prone to twisting of their pedicles more frequently than others, consequently more liable to inflammation and suppuration, followed by rupture into viscera, *e.g.*, bladder, rectum; but then they are not so fatal as the rupture of parametritic abscesses into the rectum, of which, for example, M'Clintock saw six cases all terminate fatally.[c] The rarest form of rupture is the one which occurred in the present case—namely, into the peritoneal cavity. It is not uncommon for a rupture to take place on the anterior wall of the abdomen, but so favourable a termination need hardly be expected from the anatomical relations of the ovary. Potter[d] discovered at a *post mortem* on a woman of eighty-three years a dermoid cyst weighing 89 ozs., and which had caused so little inconvenience during life as to have escaped notice. Of this more anon.

We have now to consider the question, What is a dermoid cyst?[e]

[a] Olshausen. Krankheiten d. Ovarien. Billroth's Handbuch d. Frauenkrankheiten.
[b] Ibid. [c] M'Clintock. Diseases of Women.
[d] Lond. Obstet. Transact., XII., p. 246.
[e] Luecke. Lehre von den Geschwülsten. 1869. P. 124.

In its entirety we find that it is a congenital tumour coming under the heading of Virchow's third order of tumours, the teratoid (τέρας, a prodigy), of which it is the most typical example, and having a wall composed of elements like true skin with its appendages, hairs, sebaceous glands, &c., its interior composed of loculi of various sizes, whose structure is that of fibrous tissue, and within which may be found representations of almost all the structures of the body—viz., bone, cartilage, muscle, nerve-substance, teeth, with epithelium of every kind, even to the ciliated columnar, packed by masses of unctuous material, like the vernix caseosa, which contain crystals of cholestearin and are the products of the dermal appendages. Various terms have been applied to these marvellous aggregations, of which the best, perhaps, is that adopted by Klebs, "teratome," but in no case can a tumour be designated "dermoid" which has not in its structure some one of the elements of skin. Dermoids are either external or internal. This subdivision is quite sufficient for all ordinary clinical purposes, the subsequent changes a cyst may undergo being matters concerning its individuality and not its class, which is sufficiently indicated by any one of the terms, "teratome, dermatome, piliferous cyst, pilous nævus, or dermoid cyst." The formation of secondary retention-cysts (as in acne and atheroma), inflammation, suppuration, calcareous, caseous, or fatty degeneration—all these may take place in a dermoid under certain conditions, but do not alter its natural order (namely, that of a fœtal formation) in the slightest. The external dermoids are found on the skin of the eyelids, orbit, calvarium, ear, front of the neck, nose, breast, coccyx, vulva, and scrotum. The internal occur under the tongue, in the pharynx, œsophagus, cranial cavity, peritoneal cavity, lung,[a] ovary, testis, bladder, kidney—in fact, nearly everywhere, although in solitary examples only met with the once, yet herein lies their peculiarity. They occur in places where there is a dipping in of the epiblast to meet the hypoblast during fœtal life, and are therefore fœtal in origin, resulting from the inclusion (Heschl) of abnormal[b] structures in these situations, and may be either well developed at birth, or small, and subsequently develop, as in the case of the ovary, whose natural history we can best trace. They show a peculiar tendency to develop according as they may be situated and the nature of their surround-

[a] Kölliker. Zeitschrift f. Wissensch. Zoologie.

[b] It seems paradoxical to use the term "abnormal" for what are really normal structures misplaced, but I know no better one, and do not intend to coin one.

ings is favourable or not. Thus the ovary, a highly vascularised organ at puberty, is the most favourable *situs*, whilst other situations (*e.g.*, the skin) are not so favourable; hence we find dermoids of the latter nearly always stationary growths, whereas in the ovary they may endanger life by their rapid development and exposure to dangers of every kind on all sides, whether by mechanical hyperæmia in virgins or by pregnancy and parturition in the married. From the figures in the following table, taken from Olshausen's work, it will be seen that the cases of dermoids of the ovary observed during life only begin to be numerically strong as puberty or maternity is reached—in other words, as an impetus was given to development, or a cause of discomfort arose, so did the observations increase in number. Still, however, a sufficient number of observations on persons above the critical ages exists to show that development need not necessarily follow, although the conditions be the same. Pauly[a] has collected 103 cases of his own and 59 of Lebert's, and he finds that:—8 cases occurred in the first decade of life, 29 in the second, 41 in the third, 33 in the fourth, 31 in the fifth, 13 in the sixth, 4 in the seventh, 3 over 70 years of age.

A paper on "Teratomata" would be incomplete were I to omit the varied structures, as enumerated by different authors, occurring in them more or less constantly, but I believe almost all the described structures can be obtained out of one specimen, if the trouble is taken to look for them, which can only be done by taking the tumour to pieces and making sections of every part—a piece of work which would satisfy the most ardent microscopist.

Skin and its appendages are, of course, indispensable as part of the tumour, but there is some difference in the amount of hair present—in some cases balls of it two or three feet long being found, in others, only very slight down; the amount of epithelium and of sebaceous material differs also exceedingly, in some cases forming large lumps (of which Rokitansky found seventy of the size of a walnut in an ovarian cyst, which was twisted twice on its pedicle, and to which torsion he attributed their formation), in others being quite fluid and hardening on being poured into a vessel. If retention-cysts have formed, these are lined by ciliated epithelium (Friedländer).[b] Olshausen[c] states

[a] Beiträge d. Berliner Ges. f. Geburtsh und Gynäk. 1875. B. IV., p. 3.
[b] Virch. Arch. B. LVI., p. 365.
[c] Op. cit. P. 402.

that the hair found is invariably light-coloured even in negresses.[a] Velpeau, Heschl, and Lawson Tait have dilated much upon the subject of the bones and cartilage discovered in dermoids, Heschl discovering even joints and synovial membranes, the others contenting themselves with stating that the bones resemble the structure of a fully formed fœtus. There is no doubt that the teeth are sometimes found set in a bone-plate resembling an alveolus, but as teeth cannot grow from cells floating about in a cavity, it is probable that bone exists invariably when teeth are found, and that a dentition goes on in the cavity, otherwise we never could account for so large a number of teeth being found as Paget has described—namely, 300. As a matter of fact, in Rokitansky's collection there is a specimen of a milk-tooth absorbed to the crown by an advancing one, which was taken out of a dermoid.[b] Nerve-substance has been found by Virchow (lamellated as in the cerebellum), ganglion cells by Heschl; it is usually gray matter. Smooth muscular tissue, supposed by Virchow to be the "arrectores pili" of the cyst wall, is very often present, but striped muscular fibres are an undecided appearance, some authors denying their existence, others invariably describing them. Nails, strange to say, have never been found, although Cruveilhier[c] has a plate in which he represents structures something like them. According to Lebert,[d] however, in the dermoids of birds feathers, in those of sheep wool, in those of cows cow-hairs have been found,[e] so we may still hope to see them described at some future date. I find that Sir J. Paget has classified under the term "dentigerous cysts" tumours in which teeth are found, and tumours growing from teeth, or rather cysts which form a pouch in the surrounding membrane of the teeth of the jaw. He therefore evidently does not include cysts containing teeth amongst the dermoid class. As having some analogy to these cysts, may be quoted the remarkable cases in which a whole fœtus has been found in some portion of the body—*e.g.*, in the scrotum in 19 cases collected by Verneuil, in the peritoneum by Klebs,[f] and in the testicle; they were supposed to point to the development of a fœtus in fœtu, but the dissection

[a] This is distinctly negatived by one of Mr. Abraham's preparations, in which a large amount of pigment is visible in the hair.

[b] Olshausen. Billroth's Handbuch d. Frauenkrankheiten. Article, Ovarien.

[c] Anatomie Pathol. Liv. II., p. 6, and plate.

[d] Abhandlungen. P. 99.

[e] Olshausen. Loc. cit.

[f] Handbuch der pathologischen Anatomie. Geschlechtsorgane. P. 1015, III.

of Klebs' case showed that the badly-developed and crushed fœtus had no separate blood-supply, but derived its nourishment by vessels leading from the aorta of the including fœtus. This clearly shows that the stronger ovum must have included the weaker one (of course assuming that two ova originally existed in the same germinal cavity) at an early stage of fœtal existence, and that the latter became a part of the former, until the lessened blood-supply being insufficient for further development, the weaker fœtus quietly resigned itself to this condition, and remained as a mass of useless organisms. It is remarkable that so advanced a writer as Hueter,[a] who uses the words "dermoid cysts occur particularly where a dipping-in of the external skin to the mucous membrane of the interior of the body takes place during the developmental process," should point out that ovarian dermoids are the result of the development of a fœtus in fœtu, and then leave the subject abruptly without telling us any of the other theories concerning it. The principal of these are:—

1. Excess of formative nisus (Blumenbach).
2. Parthenogenesis (Waldeyer, subsequently abandoned).
3. Inclusion of abnormal structures and pinching off of same during fœtal life (originating with Heschl,[b] who, in 1860, first advanced this theory for all dermoids except the ovarian, for which he refused to account, although, as we shall see subsequently, the experiments of His[c] proved the correctness of his theory, and the possible application of it to the testicle and ovary as well).
4. Fœtus in fœtu (Verneuil, Hueter).
5. Parthenogenesis and hyperechesis, for ovary especially (Lawson Tait).

This last theory deserves more than a passing remark, as it contains a new term, and has not a single truth to stand upon. Its author states that dermoids would be found in the testicle as well as in the ovary, were they fœtal in origin. There are innumerable cases recorded of dermoids of the testis—*e.g.*, in Klebs' Pathology, and hardly a list is given of places of election in which testicle and ovary do not occupy the first place in their order of occurrence. Then, again, attention is drawn to a case in which Mr. Tait[d] was unable to remove a dermoid

[a] Grundriss d. Chirurgie. Allgemeiner Theil. Pp. 270, 360. Leipsic, 1880.
[b] Prager Vierteljahrschrift, 1860. IV., p. 36.
[c] Untersuchungen über die erste Anlage d. Wirbelthiere. I., p. 275. Leipsic, 1868.
[d] Lawson Tait. Diseases of Women. Article, Ovaries.

(as it was supposed to be) of the ovary, which had nothing whatever to do with that organ, being situated high upon the abdominal wall beneath the peritoneum, and which he supposes to have been an escaped ovum settling itself on the peritoneum, and there carrying on its attempts at parthenogenetic development. Now, Erichsen mentions that dermoids grow in the mesentery, and the peritoneum has been included in the list of places in which they grow, at the beginning of this paper, yet this particular tumour may have been at one time attached to the ovary, become twisted on its pedicle, inflamed, and have contracted adhesions to the peritoneum, the pedicle subsequently becoming detached, in which case it would be also beneath the peritoneum. Professor Purser has an interesting specimen of a calcified fibroid, which had at one time been attached to the uterus, but which, having undergone a change as above, was found, *post mortem*, attached, with several others, to the sides of the spine. Such common-place occurrences should be taken into consideration in advancing a theory, especially so fanciful a one as that of parthenogenesis. Moreover, a cyst-wall can hardly be said to "secrete pounds of sebaceous matter and hundreds of teeth," even supposing it to be an "hyperechetic" one. There is also no reason why the cyst in question may not have originated in the skin, and grown inwards, according to the theory of inclusion, into the peritoneal cavity. Mr. Tait believes that if such an ovum had fallen into the uterus it would there have similarly developed, but it would be hardly safe to let such a belief get wind amongst the opposite sex for obvious reasons.

The theory of Inclusion (No. III.) being the only one now tenable we must proceed to its discussion. As soon as His published the results of his examinations and investigations into the origin of the axial cord they were at once seized upon to complete Heschl's theory beforementioned. According to His the rudiments of the genitals are formed out of this axial cord, to the formation of which all the three layers of the embryo contribute, but mostly the horny layer. It is not possible to differentiate layers in this cord, and hence it is easily seen how parts corresponding to the upper, horny layer or epiblast—*e.g.*, ciliated epithelium (spinal canal); or to the middle, mesoblastic layer—*e.g.*, muscle, bones—can be included with testicle or ovary. This would have sufficed to all intents and purposes, but Kölliker[a] flatly contradicts His'

[a] Entwickelungs-geschichte des Menschen. Vol. II., p. 248.

statements, and says that his results were obtained by using perosmic acid in the preparation of the embryos, which shrivels them up and makes examination an impossibility. He (Kölliker) also concurs with the younger Virchow in opposing Balfour's view as to the origin of the mesoblast—namely, that it arose by the migration of cell productions from below the hypoblast, which passed either through the latter or around its peripheral margin to the centre of the blastoderm, rapidly multiplying when there, so as to complete a middle layer by about the eighteenth hour (Stricker, Waldeyer, Klein).[a] Kölliker has sought in vain for evidences of such migration, and attributes the formation of the mesoblast entirely to proliferation of cells connected originally with the lower surface of the epiblast. This is the most likely theory, and the one which is best supported; it is also the most important one for our theory of inclusion, as it is only by settling definitely the origin of the mesoblast that this theory can be established. It has been said that all results obtained in embryology have been only comparative, and could not be positively brought to bear on human development; yet these results are so definite, and have (in the few instances in which it was possible to compare them with the human embryo) been found to coincide so accurately as to leave no room for the interpolation of scepticism on a few points of difference which are unimportant when taken as a whole. It is now established that the formation of the permanent genital and urinary organs is preceded by the development of a temporary glandular organ—the Wolffian body—to form which the mesoblast principally contributes—in fact, altogether contributes (Waldeyer, Schenk, and Balfour). This body is formed, along with the allantois, about the third week, has attained full size about the sixth, and is rapidly diminishing in the seventh and eighth, so that about the third month only a trace is visible. It consists, when fully formed, of short, slightly-convoluted tubes, running transversely, connected on the inner side with vascular glomeruli, very similar to the Malpighian corpuscles of the permanent kidney, and leading along the outer border into a tube named the Wolffian duct, which terminates in the cloaca. This duct is first formed, and begins in the intermediate cell-mass as a cord; the tubular and glomerular structure of the Wolffian body is developed as diverticula from the duct in connexion with neighbouring blastema. The intermediate cell-mass now forms a projection to the outside of the mesentery

[a] Quain's Anatomy. Vol. II. Development.

(which is median), and the epithelium on its surface exhibits a considerable thickening in two places—firstly, along the inner side, where it becomes columnar, and forms an opaque white ridge—the "germ epithelium"—the seat of the primitive ovigerms; secondly, along the outer side, in a line inside of the Wolffian duct, where by a process of grooved involution is formed the Müllerian duct. Both these ducts exist in all embryoes of birds and mammals, whatever their sex may ultimately be; but they have a different sexual destination, for the duct of Müller becomes the oviduct or Fallopian tube of the female, whilst the Wolffian duct becomes the vas deferens of the testicle. Remains are to be found of the duct of Müller in the male as the hydatid of Morgagni; of the Wolffian body as the organ of Giraldés, in the testicle; and in the female the most constant vestige of the Wolffian duct is the organ of Rosenmüller or parovarium of Kobelt (the epoöphoron of Waldeyer). In the sow and ruminants the main tube remains as the duct of Gärtner, traceable in the broad ligament and lost on the walls of the uterus and vagina; by some authors it is even held to be found in every female if sought for. The thickening of the intermediate cell-mass now forms the "reproductive gland" which is common to both sexes, and from which subsequently is developed testicle or ovary, as the case may be, the latter being formed by a peculiar intermixture of the superficial germinal cells with the deeper blastema which forms the stroma. This reproductive gland is from the first connected with the Wolffian body, of which its blastema seems to be a part, and remains attached to it by the fold of peritoneum known as the mesorchium or mesovarium. Should an ovary be the result of the further development, ova are formed from the superficial epithelium, and the stroma from the subjacent tissue by direct growth. The nucleus of each epithelial cell becomes the germinal vesicle of the primordial ovum, and the enclosure of these in a Graafian vesicle takes place by outgrowth of processes of connective tissue of the stroma. The formation of the oviduct, uterus, &c., in the female, and the descent of the testicle in the male, as well as of the common excretory apparatus, are not here required to be gone into; but there is yet an interesting point to be alluded to, which here finds its proper place. Before the seventh or eighth week of fœtal life, as before mentioned, a differentiation of sex is not possible, as the reproductive gland has not yet undergone any material change; the superficial or germ epithelium exhibits some tendency to

enlargement of some cells as ovigerms, even though a testicle be the subsequent result of development and is even then in process of formation within the cell-mass, but they (the cells) undergo atrophy and become reduced in size as the sex becomes more manifest. Should this, however, not happen we have all the requirements for "internal hermaphroditism," and may then find the testicle and ovary (although only primitively) developing side by side, as in the case reported by Dr. Heppner, of St. Petersburg,[a] in which he found a very remarkable example of this malformation. To say more on this would be only to repeat what has already been said—namely, that dermoids, wherever they occur, are fœtal structures which have been included by the processes of grooved involution we see continuously going on in the embryo (be they external or internal, or do they contain only two or more of the necessary elements), and being then pinched off they are left to their own devices, be they good or evil.

Dr. Purser, who kindly allowed me to study his elaborate series of sections of the embryo chick, and to exhibit several of them, has one remarkable series in which, from causes unknown but evidently by grooved involution, the embryo is deformed, and we see not one spinal canal as the result of the primitive groove in the epiblast, but three or four canals of different shapes and sizes. When a malformation so extraordinary as this occurs so easily and is so easily demonstrable, I do not see why, with evidence so conclusive as that collected in this paper (which is, however, I fear but very imperfect), we are justified in even discussing any other theories which can only remain theories, and have no support whatever either pathological, anatomical, or experimental. That unfortunate organ, the ovary, being connected so intimately with the generative processes in the female, was of course pounced upon by those writers who had a theory to advance as the best place to adhere to for proofs (to the exclusion of all other situations in which dermoids have been found), for had they not here a most wonderful structure containing millions of ovigerms and a host of other unknown but most obliging satellites, ready to burst forth as any wonderful and inexplicable pathological curiosity found, and did not all kinds of unknown processes go on in this organ, and furnish a reason for every ill that women are subject to? This was also due to the fact that ovarian dermoid cysts are more palpable and seem to develop with

[a] Dubois Reymond's Archiv. 1870.

peculiar energy on account of their great vascular supply. To explain the process of inclusion as now established, it is necessary to leave the ovary and testicle to the very last and to begin with the cutaneous dermoids; and then it is not too difficult, by studying the special development of these organs, to bring them under the same heading, pathologically speaking. Having said so much of the ovary I do not think it will be necessary to follow the testicle more particularly, except that I think it would be well to remember that a dermoid of any size occurring in that organ will prevent its descent into the scrotum; and we have here another cause of "retained testicle," and one which may be more common than supposed, as probably some of those cases in which there is absence of one or both testicles congenitally are only of this nature, and might come under operative treatment if suspected. I have not seen this advocated in any of the text-books, however, nor have I met with more than one case of retained testicle in my very limited experience.[a]

To summarise what we may now take as conclusive on the subject of dermoid cysts:—We know, firstly, that dermoids occur externally and internally in places where the epiblast dips down to meet the hypoblast, and where by processes of grooved involution new bodies are formed, such being, first in order, the testicle and ovary, and that they are therefore all (without exception) embryonal in their first structure. Although small at first, they may under certain conditions develop to an enormous size, as occurs in the ovary, where a periodical fluxion of blood goes on after puberty, about which time it has been observed that the dermoids take on growth. Secondly, that the fact of the occurrence of bone, muscle, nerve, &c., in the genital dermoids need not alarm us; for we know that all three layers of the blastoderm contribute to form the intermediary body (the Wolffian), from which the ovary and testicle become developed, and hence cells belonging to either layer may only too readily become pinched off in the involution-process. Thirdly, that they are perfectly innocent growths anywhere, except in the ovary, where they are exposed to much mechanical irritation, but are there only malignant in the way in which any other growth might become so when inflamed, &c., that we ought to recognise them under the one appellation, and not to advance new names and theories for each single

[a] Schüller (Centralblatt f. Chirurgie, 52, 1881) describes an operation for the transplantation of the testicle into the scrotum.

case, and that we should carefully note the place of occurrence of each case we meet with, and subject the growth to a microscopical examination if it has been removed. Lastly, that fœtal remains (properly so called, not merely shapeless bone, &c.) found within the body of another fœtus do not point to the "formation of a fœtus in fœtu,"[a] neither are they analogous to dermoid cysts, but are due to the action of an *analogous process* at an earlier stage of embryonal life—namely, inclusion of one ovum within another, the included one becoming part and parcel of the stronger one, and subsequently perishing.

Since writing the above I have received the last edition of Billroth's Pathologie und Therapie,[b] and I find only a cursory notice about dermoid cysts, which he considers a variety of the atheromatous cysts. He draws a distinction also between the dermoids of the head and those of the neck, and calls them "choleastomata." The process of inclusion is referred to only in connexion with ranula, which is, according to Billroth, a good example of this class of tumours. Dermoids of the ovary and testis, strange to say, are not even mentioned in this the favourite text-book of surgical pathology. The obvious nature of the error in the whole paragraph renders a further inquiry into it quite unnecessary—*e.g.*, in one sentence dermoids are considered portions of skin-glands which have developed from some unaccountable reason; in another they are fœtal remains, and again, ranula, &c. Not even the great authority of Billroth, however, can alter facts; it therefore only remains for me to add the following list of modern cases which I have succeeded in collecting from various sources:—

Weber, H.—"Dermoid d. Ovariums," Marburg, 1878.

Marchant, F.—"Teratoid Tumour of Ovary," *Breslau. ärztl. Ztsch.*, III., p. 21, 1881.

Byford, W. H.—"Ovarian Dermoid," *Amer. Gynæcol. Trans.*, III., p. 162, 1881.

Born, G.—"Sacral Tumour, with Five Months' Fœtus," Bonn, 1878, Inaug. Dissert.

Santesson, C. and Key.—"Dermoid of the External Ear," *Hygiea*, XLI., Häfte 12.

Barnes, Robert.—*St. George's Hospital Reports* (1874–76, p. 57,

[a] Hueter. Grundriss d. Chirurgie. I., 340.

[b] Billroth—von Winiwärter., Chirurg. Pathologie u. Ther. Tenth edition. Berlin. March, 1882. P. 876.

RADFORD LIBRARY MANCHESTER

Plate I

ST MARY'S HOSPITAL
RADFORD
LIBRARY
MANCHESTER

From a Photograph.

Plate II

MR. STOKES ON THE TALIACOTIAN OPERATION.

ST MARY'S HOSPITAL
RADFORD
LIBRARY
MANCHESTER

Plate III

ST MARY'S HOSPITAL
RADFORD
LIBRARY
MANCHESTER

From a Photograph.

1877), VIII., "Four Cases of Dermoid Cysts Complicating Labour."

Oliver.—*Dublin Journal of Medical Science*, LXV., p. 168, Feb. 1878, "Dermoid at the Anus."

Gueterbock, Paul.—"Dermoid Cyst on the Floor of Mouth," *Arch. f. klin. Chir.*, XXII., p. 985.

Coleman, Alfred.—"On Cysts Containing Teeth," *St. Barth. Hosp. Rep.*, XII., p. 91, 1876.

Barnes.—"Dermoid Cyst with Hair, Teeth, and Bone," *Obstet. Trans.*, XVI., p. 215, 1876.

Miller, Hugh.—"Ovarian Dermoid," *Glasgow Medical Journal*, VIII., p. 170, April, 1876.

ART. XIX.—*On the Taliacotian Operation.* By WILLIAM STOKES, M.Ch., Univ., Dub.; F.R.C.S.I.; President of the Pathological Society of Ireland; Professor of Surgery, Royal College of Surgeons; Surgeon to Richmond Surgical Hospital; Fellow of the Royal Medico-Chirurgical Society of London; Member of the Clinical Society of London; formerly Examiner in Surgery to the Queen's University of Ireland; Member of the Royal Irish Academy; Consulting Surgeon to the Dental Hospital of Ireland; Corresponding Member of the Hufeland Medico-Chirurgical Society of Berlin; Member of Council, Royal College of Surgeons and Surgical Society of Ireland; &c.

THE following case is of interest and deserving of record, in a threefold point of view—first, on account of its surgical importance; secondly, from the fact of its possessing to a certain extent a distinctly romantic character; and, lastly, from the patient being, as far as I am aware, the subject of the first Taliacotian rhinoplastic operation performed in Ireland:—

About four years ago J. H., aged seventeen, while playing with a companion who was armed with a gun, which at the time he was not aware was loaded, received accidentally portion of a charge of shot in the face. The result of this was a deep wound on the right side of the cheek, and also the loss of fully one-half of the nose. The wound on the cheek was followed by the formation of a well-marked and very disfiguring cicatrix. The appearance of this, as well as the nasal defect, is faithfully represented in the accompanying lithograph (Plate I.) taken from a photograph representing the deformity when he first consulted me. This was a

few weeks after he had sustained the accident. The patient was very anxious to have an operation performed, but at the time I endeavoured to dissuade him from it, as flaps from the cheeks were not available, owing to the large amount of cicatricial tissue there. The other method of which I had experience—viz., the Indian rhinoplastic operation—is one which necessarily leaves a disfiguring scar on the forehead, and the making of this would have been a regretful circumstance, having regard to the patient's youth and good looks. Under these circumstances I recommended the patient not to have any plastic operation performed, but to get an artificial nose made of vulcanite or some similar substance. This he did, going to London for the purpose at great personal inconvenience and expense. The artificial nose (in the making of which great skill and ingenuity was displayed) he wore for upwards of two years, though neither he nor his friends were very well satisfied with it.

Among the latter, as I was informed—though I give this "under reserve"—was a young lady with whom he formed an attachment, which those principally concerned hoped would eventuate in a matrimonial alliance. This circumstance naturally made the patient very urgent to have a plastic operation of some kind performed.

Accordingly he came up last October a second time to consult me. Being unwilling to perform the Indian Rhinoplastic, for the reasons already mentioned, it occurred to me that the case was one suitable for the Taliacotian operation. I had recently had the pleasure of reading Sir William MacCormac's interesting communication on this operation in Vol. X. of the "Clinical Society's Transactions," and I had also the advantage of getting his opinion on the case during a short visit to Dublin which he paid last October. His opinion was that it was one eminently suitable for the Taliacotian operation, and kindly consented to lend me the apparatus—one he used in his case—and made very much on the principle of that described and illustrated in the classical work of Taliacozzi, published in Venice in 1597. As I purposed utilising the margins of both nostrils, I determined to free them by cutting through the tissues all round, leaving them, however, attached at each side of the ala of the nose. On drawing down the partially separated margin of the nostril, it was clear the defect to be remedied would be somewhat lozenge-shaped, and that the flap on the arm would have to be formed accordingly. The shape of

the flap, therefore, was somewhat like the accompanying rough diagram, great care being taken to make due allowance for the subsequent contraction of the flap, both previous and subsequent to its transplantation to the face.

ST. MARY'S HOSPITAL
RADFORD
LIBRARY
MANCHESTER

On the 8th November I performed the first part of the operation—namely, the formation of the lozenge-shaped flap from over the left biceps, attached below by a broad pedicle; a piece of lint soaked in carbolic acid was laid under it, cotton wadding wrapped round the arm, and the whole limb from the fingers to the shoulder wrapped in a soft thick flannel bandage. Immediately after this a most unhappy sequence of events occurred. On the morning following the operation the patient's temperature was found to be very high, being 104°, and pulse 102. He had slept badly, and had much inclination to nausea. Later in the day the face became much flushed and swollen, and it was soon apparent that the patient had erysipelas of the head, there being, however, strange to say, no evidence of it in the immediate vicinity of the arm-flap. On the 11th November the fever was very high, the temperature reaching 105·4°, and the patient becoming very delirious during the night. From my hospital case-book I may extract the following notes indicating the progress of the case. They were taken, with his usual accuracy and care, by Mr. Cassidi, my resident clinical assistant:—

Nov. 12.—Temperature, 104·4°; pulse, 102. Had three smart attacks of epistaxis last night; lost a good deal of blood; says he feels much better to-day. The wound was dressed by Mr. Stokes this morning; looking very healthy; no inflammation.

Nov. 13.—Temperature, 102·5°; pulse, 96. Very troublesome epistaxis last night, after which he became very delirious; has remained so all day. Given chloral hyd., gr. 15, and potassii bromid., gr. 30, this evening; no effect.

Nov. 14.—Very delirious and violent; great difficulty in keeping patient in bed. Given with much difficulty pills containing extr. conii, and a mixture with potassii bromid. in infus. lupuli.

Nov. 15.—Slightly quieter last night; slept a little; passed a quiet, drowsy day.

Nov. 16.—Called up this morning at 5 a.m., his arm being bleeding; opened the dressings and found the hæmorrhage had stopped; a good deal of blood lost. Bleeding came on again about 11 a.m.; found that it proceeded from a small arterial branch. Mr. Stokes arrested it by applying a catgut ligature.

Nov. 17.—Weak to-day; not so restless. Ordered mist. diaph.; pulv. hydrargyri cum cretâ, gr. 1, quâque horâ. The erysipelas has appeared now in his left shoulder; painted it over with tinct. ferri perchlor.

Nov. 18.—The erysipelas has appeared now in his right shoulder. Tincture of perchloride of iron applied as before on left shoulder. Ordered ice and lemonade.

Nov. 19.—Weaker to-day. Ordered quiniæ sulph., gr. 3, ter in die.

Nov. 22.—Arm dressed to-day; a good deal of suppuration.

Nov. 24.—Patient much stronger, and in every way better.

From this the patient steadily continued to improve. It was not, however, until Dec. 12 (a month and two days after the first stage of the operation was completed) that I felt justified in proceeding to the second.

On the 10th Dec. I proceeded to perform the second stage of the operation. I commenced by transfixing the tissues all round the upper margin of each nostril, going through the lower portion of the septum also. It had, therefore, three points of attachment left—a central one at the septum and one at each side of the ala of the nose. I then drew down this partially detached portion of tissue to a point which I wished to correspond to the apex of the new nose. To keep it in this position, until the flap from the arm should unite to its edges, was a difficulty which, however, I overcame by the adoption of an expedient which I found to answer very well. I formed of some strong silver wire a buttress somewhat of this shape:—

One of the prong-like extremities of this buttress was fixed under the skin immediately overlying the nasal bones, and the other into the portion of tissue which was to form the apex. I considered, too, the buttress would also have the advantage of supporting the transplanted flap from the arm. This having been

done, the next stage of the operation was to transplant the lozenge-shaped arm-flap which, owing to the great length of time which had elapsed since it was made—a delay due to the supervention of the dangerous attack of erysipelas the patient had after the first operation—had become greatly contracted and shrunken. The apparatus already alluded to, for keeping the arm to the head until union should take place, was then adjusted, the construction of which can be understood by reference to the annexed lithograph (Plate II.), taken from a photograph made by Mr. Bulfin, one of the resident clinical clerks of the hospital, and also from the following description of it by Sir William MacCormac :—

To a pair of ordinary, stout, well-fitting stays were attached two perinæal straps to prevent displacement upwards. "A helmet, partly made of leather, was connected with the stays by a leather band running up the centre of the neck and back. A leather arm-piece, strengthened by a steel band, was moulded so as to extend from the wrist to the shoulder, where it was buckled to the stays. The wrist and hand were fastened to the helmet by a gauntlet, while the elbow could be fixed steadily in any required position by straps running from it to the stays and to the sides of the head-piece, so that there was nowhere any undue strain, the pressure being so evenly distributed that each strap was almost slack."[a] For some days previous to the performance of the second part of the operation the patient underwent a "drill"—namely, having to wear for some hours daily this apparatus, with a view of making him to a certain extent accustomed to it.

The edges of the arm-flap having been vivified and some of the redundant granulation tissue having been removed from its posterior surface, it was attached to its new position by numerous points of interrupted silver-wire sutures.

The following notes were then taken by Mr. Cassidi :—

11 p.m.—The patient has been comfortable and easy all day. His temperature is normal. The raw surface from which the flap was raised is dressed occasionally with lint dipped in carbolic lotion.

Second day.—Had a very good night; slept most of the time. Temperature quite normal; arm quite comfortable.

Fourth day.—Had a good night; pain in the arm last night. Hypodermic injection of morphia, ♏ iij.

From this the patient continued very well and free from discomfort. He appeared to get quite used to the apparatus.

[a] Clinical Society's Trans. Vol. X., p. 183.

On Dec. 24th, the fourteenth day after the transplantation of the flap, Mr. Stokes performed the third stage of the operation, separating the pedicle, and thus freeing the arm. The anticipated hæmorrhage did not occur to any very great extent; two carbolised catgut sutures only had to be applied. Mr. Stokes spent a considerable time in trimming and paring the flap and fastening the edges of the lower portion especially by numerous points of carbolised silk ligature. The patient's arm, after the fourteen days' rigid fixation to the head, was so stiff and painful that some time elapsed before it could be brought to the side. In a few hours, however, the pain subsided. For some hours the flap looked very pale, and its temperature was very low, so much so that fears were entertained as to its retaining its vitality. In this respect, however, there was marked improvement towards evening.

Dec. 26th.—Arm and nose dressed to-day; both looking very well. Patient feels much better. He has lost most of his hair, some of which fell out immediately after the erysipelas and some while wearing the Taliacotian apparatus.

Jan. 9, 1882.—The operation has been successful to a very considerable extent, though to improve the appearance of the nose Mr. Stokes contemplates a further operative measure.

Feb. 17.—Mr. Stokes operated on the nose to-day, elevating and partially excising portion of the cicatrix which had fallen in too much, producing a hollow or furrow on the right side, which was very disfiguring. This operation has been very successful.

March 1.—Mr. Stokes operated again to-day, dealing chiefly with the left side. A good deal of cicatricial elevation, trimming, and paring was done, which was followed by marked improvement in the appearance of the patient.

Shortly after this a photograph, from which the accompanying lithograph (Plate III.) is made, was taken of him, and gives a faithful representation of his present condition.

I was pleased to hear after the patient left the hospital that the result of the operation was such as to remove any obstacles that may have previously existed in reference to a realisation of his matrimonial projects.

From the above account it will be seen that the procedure adopted differed in some respects from the original operation of Taliacozzi. He made the arm-flap in the first instance attached by two pedicles, one above and the other below. When suppuration was established, the flap thickened, and the edges incrusted, "it was cut free at the upper end, presenting a line with the convexity directed upwards. It was then most carefully dressed and

attended to until the under-surface had become cicatrised as far as possible. Remaining attached by one extremity to the arm, it underwent a process of thickening, contraction, and wrinkling, accompanied with the growth of hair, which Taliacozzi fancifully compared to different stages of growth. About the fourteenth day after the second operation it was considered to be in a state of maturity."[a] In Sir William MacCormac's case, in which an admirable result was obtained, no interval was allowed between the formation of the arm-flap and its transplantation to the face. This method has doubtless some advantages, such as the flap not becoming so thickened, contracted, and wrinkled. However, I am glad I followed the Taliacotian method in the case above related, for the supervention of the attack of erysipelas which occurred, and was so nearly proving fatal, would have certainly led to failure as far as the operation itself was concerned.

The plan I carried out in this case of maintaining elevation of the flap by means of a silver-wire buttress, temporarily inserted under the flap, is one worthy of adoption by surgeons who feel themselves competent to undertake operations so complicated and difficult as that under consideration. This was not the first time I carried out the principle of elevation of the flaps by metallic buttresses in the rhinoplastic operation. In the pages of this Journal (Nov., 1877) will be found the record of a case I operated on, in which, during the healing of the flaps, elevation was maintained by an instrument illustrated in my paper, and which was made for me with much skill by my friend, Mr. W. B. Pearsall. The result of the case was most satisfactory. This instrument, however, is not applicable to the Taliacotian rhinoplastic operation, as in the latter the apparatus for fixing the arm to the head would not admit of its being used. Although the operation of Taliacozzi is one not likely ever to become of very general adoption, still cases will occasionally occur, like that recorded by Sir William MacCormac and the one under immediate consideration, in which it is certainly to be preferred either to the Indian Rhinoplastic or the old operation of Celsus as revived by Larrey, Dieffenbach, and Syme, in which the flaps are taken from the cheeks. The record of a case in which I performed this latter form of rhinoplasty will be found in the pages of this Journal.[b] The case presents features of special interest to the operating surgeon.

[a] Rhinoplasty. Holmes Coote. System of Surgery. T. Holmes. Vol. III., p. 117.
[b] Dublin Journal of Medical Science. Vol. LIV. December, 1872. Page 442.

ART. XX.—*Observations on Pilocarpine.*[a] By WILLIAM A. M'KEOWN, M.D.; Surgeon to the Ulster Eye, Ear, and Throat Hospital, Belfast.

I PURPOSE bringing before you, as shortly as possible, my experience of the use of pilocarpine; but before doing so, I shall show you its usual effects by injecting subcutaneously the two patients whom I have brought here for the purpose. The preparation I employ is a solution of the nitrate of pilocarpine, and the strength is 1 in 20. The younger of the two, a lad about twelve years of age, has been treated for about a couple of months by the injection almost daily of from four to five minims of the solution, whilst the elder, a young man of twenty years, has been treated for a similar period by the injection of five to six minims daily. You can observe now, immediately after the injection in both cases, great quickening of the heart's action and flushing of the face, followed by copious perspiration over the whole body, and free salivation. If you open the mouth, and place your finger for a few seconds on the opening of the duct of either the submaxillary or parotid gland, and afterwards remove it, you will find a regular spout of fluid from the duct. The laryngeal and nasal secretions are also increased to some extent, and likewise it is said the bronchial. The internal muscular apparatus of the eye is affected, a sort of spasm of accommodation being induced—hence patients complain of dimness of vision for distance. It is remarkable also that the genito-urinary organs in both male and female are affected. In these two cases, shortly after the injection there is a desire to pass water, and this, I may remark, is a very constant symptom. It does not arise from an increased flow, but rather from a contraction of the muscular coats of the bladder. The desire exists even when there is little or no urine to be voided—at the same time, often severe pain at the end of the penis is experienced. Special action seems also to be exerted on the vasomotor centre regulating the vascular supply to the penis. In both these cases erection of that organ takes place. I have been told by the elder of the two of another effect, which is rather unusual—viz., the ejection occasionally of a large quantity of pretty clear fluid (about a pint) from the stomach, although he had not taken any fluid for a long time previously, and had not swallowed any saliva.

[a] Read before the Ulster Medical Society, March, 1882.

In addition I may mention that in two instances hiccough, continuing for hours, followed the injection. In one case each injection was followed by a bloody discharge from the female genital passages, without pain or other symptom anywhere. In another case the menstrual period was anticipated by a couple of days. Giddiness, with tendency to faintness, also sickness and vomiting, are not unusual.

Putting aside altogether the question of the exact *modus operandi* of the drug, which would lead us too much into vaso-motor theories, let us look to the facts which are patent to everyone. The heart, the capillaries of the skin, the sudoriparous glands, the submaxillary and parotid glands, the accommodative apparatus of the eye, the muscular coats of the bladder, the vascular supply of the penis, the female genital organs, the stomachal secretion, the diaphragm, are all affected, some with unvarying regularity, and some occasionally.

Probable Effect on the Circulation in parts not under Observation.—Seeing now the dilatation of vessels of the cutaneous surface, it is now for you to think of what may—indeed what I might say almost certainly does—take place in other extensive vascular areas not under observation. If the whole of the capillaries of the body, with the arteries and veins, were in the same condition of dilatation as those of the cutaneous surface, it is almost a question whether the circulation could be carried on at all.

Now, physiological experiments have shown that, when, by some means or other, dilatation of a large vascular area was established, a balancing diminution of the vessels in some other large area took place simultaneously. We have good grounds for believing that pilocarpine acts in this way. We endeavour to relieve a stagnant internal vascular tract, and promote absorption of effusions by opening up the surface channels, and draining from the blood flowing therein a large quantity of fluid. This is really our object, whether we are dealing with fluid in the peritoneum or in the eye, with a congested kidney, or suppressed eruptive disease.

I have remarked that giddiness and faintness are often complained of. Do these symptoms not point to a diminution of the cerebral supply of blood, and have we not an indication for the use of pilocarpine in affections of the brain and its membranes, supposed to be attended with increased vascularity and effusion?

With these general remarks I now pass more particularly to my clinical experience. You must not expect me to deal with the

question before us in an exhaustive or very systematic manner, but rather in a suggestive way.

Action in a Case of Painful Menstruation.—From what you have seen of the influence of the drug on the sudoriparous secretion, you would naturally expect that it would have a salutary influence in cases in which that secretion was absent. I had an opportunity of putting this to the test, but with a very different result from what I had anticipated.

Case I.—A lady, apparently about thirty-five years of age, consulted me for an aural affection. I came to the conclusion that it was of a nervous character. She had been a victim to severe neuralgia of the head and face, for which she had consulted several London practitioners skilled in nervous diseases, but without material benefit. She suffered likewise from extremely painful menstruation, for which she had been under the care of several gynæcologists, but had obtained no relief. She casually told me that she never perspired, no matter how much exercise she took—that the only effect of the exercise was great flushing and heat of the head and trunk, attended with throbbing in the head. I resolved to try pilocarpine. I began with a subcutaneous dose of six minims of the solution. It caused great congestion of the head, the chest became also of a rosy tint, there was copious salivation, but no cutaneous secretion whatever. The feet and legs remained cold. Next day she told me her illness came on during the night, and that she had never had so little pain. I continued the pilocarpine for a week in gradually increasing doses till I reached 12 minims, equivalent to $\frac{12}{20}$ths of a grain of the nitrate of pilocarpine, but without inducing perspiration. The feet and legs always remained cold. Injection of the drug in the leg, which I tried on one occasion, did not at all improve the circulation in the lower extremities. I tried to aid the action of pilocarpine by hot jars to the feet and friction of the legs, but without appreciable effect. The vascular area of the lower extremities was, therefore, stubborn to pilocarpine. The lady afterwards went to India and married, but I have heard nothing of her since.

Discharge of Blood from Vagina after Injection.—I have another case at present under treatment, showing the influence of pilocarpine on the female generative organs.

Case II.—A young woman, aged eighteen years, well developed, and to all appearances healthy, has been under my care for some time for a cloudiness of the vitreous in one eye, quickly appearing and disappearing, probably from some vasomotor disturbance. There is a patch of hæmorrhagic effusion in the chorioid. The other eye has been almost blind for a considerable time from dense opacities in the vitreous,

probably of hæmorrhagic origin, and completely obscuring the fundus. After treatment by pilocarpine for some time, I learned that every injection was followed immediately by a bloody discharge from the genital passage, something like what takes place during her "illness." This discharge was unattended by any pain anywhere.

I think these two cases show that at least sometimes pilocarpine exerts a great influence on the female generative organs, and it remains for those who have large opportunities of treating diseases of women to ascertain whether this medicine can be used with advantage in certain uterine and ovarian affections.

Action on the Bladder.—I have already mentioned the influence of pilocarpine on the bladder. I would venture to throw out a hint regarding its possible use in atony of that organ. If pilocarpine cause contraction of the bladder, of which I have no doubt, might it not be used with advantage in the cases referred to after the urine has been drawn off? You know that belladonna is the agent, above all others, for incontinence of the bladder in children. As regards the bladder, then, pilocarpine contracts and exerts a sort of irritative action; belladonna, on the contrary, diminishes muscular action and soothes.

Antagonism of Pilocarpine and Belladonna.—This leads me to another point—the very general antagonism between pilocarpine and belladonna. It is rather odd that this should be manifested in precisely the same way on the muscular tissue of two organs with functions so different as the eye and the bladder. Pilocarpine has on the eye a myotic effect, and brings about increased action of the accommodative apparatus; belladonna is a mydriatic, and paralyses the accommodation. Pilocarpine increases salivary secretion; atropine diminishes it. Pilocarpine causes perspiration; atropine prevents it. Pilocarpine diminishes vascular tension, at least in some parts; atropine increases it. They both increase the pulse rate, but from different causes, on which I do not enter here.

Atropine an Antidote for a Dangerous Dose of Pilocarpine.—You will reasonably expect, from what I have said, that atropine is the antidote—and I am glad to say an effective one—should pilocarpine exert its influence to a dangerous extent. One hundredth of a grain of atropine should save a patient from any danger from a moderate dose of pilocarpine. For this reason I look upon pilocarpine as a very safe drug if the physician only take the precaution, when administering the drug on the first occasion, to remain with the patient and observe the effects. From what I

have seen I consider the physician should make this an invariable rule at any rate when he uses the drug hypodermically.

Retarding Effect of Instillation of Atropine in the Eye.—An almost infinitesimal quantity of atropine to some extent prevents the full action of pilocarpine, or retards it for a considerable time. For example, in the case of the young man before you, a drop of a solution of atropine (4 grs. to the ounce) was one day applied to each eye to aid ophthalmoscopic examination. On that and the following day the usual dose of pilocarpine fell far short of its usual effects. In the case of a man aged sixty years a drop of atropine solution had been applied three times daily for some time after cataract operation. I injected 3 minims of the solution of pilocarpine to relieve chorioidal congestion. Twenty minutes after injection little effect was observed. It had caused neither perspiration nor salivation. Afterwards, however, free perspiration and salivation, attended with sickness, took place. So you will note that a considerable difference in different patients is observed. It is, therefore, wise to ascertain exactly the susceptibility of each individual subjected to its influence.

Use of Pilocarpine in Optic Neuritis and Intra-Cranial Disease.

Case III.—A sergeant of the army was brought to me some months since, suffering from almost total blindness, resulting from optic neuritis. He stated that about six years previously, when engaged with some comrades excavating beside the Thames, a bank of earth fell upon them. It was some time before he was extricated. He suffered much from cold and wet. He lost the power of his limbs for a couple of weeks. He had had ever since severe pain in the head. When I saw him he dreaded any sudden movement of the head, or an incautious step. To shake his head caused him much pain, which he referred to the interior of the cranium. His step was quite firm, and he had no paralysis, cramps, numbness, or any other symptoms referred to the extremities. He also complained of pain in the neck on turning his head round, or bending his neck quickly. I inferred from what he told me, and from what I saw, that there was probably some chronic inflammation of the membranes of the brain and spinal cord at some part, with, perhaps, some deposit, and that rapid derivation by pilocarpine might relieve congestion, induce absorption, and perhaps improve vision. No history of syphilis. I injected pilocarpine for some time, with the result of relieving the pains, but without improving the vision. The pains were completely removed, I believe, but, as I chance not to have taken a note at the time, I do not say so absolutely.

I have reason to hope that many cases of optic neuritis will, when taken early, be amenable to treatment by pilocarpine.

Case IV.—A healthy-looking lad, now under treatment, aged fourteen years, suffered for a month before he came to me from severe pain in the head and sleepiness, with failure of the right eye. A week before his visit to me his left eye came to be affected also. When I saw him I found optic neuritis of both eyes, not of a very pronounced kind, and indicated only by slight muddiness of the disc and margins, with fulness of the veins and slight exudation along the course of some of the vessels and round the macula of each eye. With the right eye only he had quantitative perception of light; with the left he could count fingers close to the eye. After treatment for a fortnight he came to see to count fingers with each eye at six feet. After the first injection he stated that he felt better, and that his sight was decidedly improved. The case was one of such gravity that although I am an advocate for simplicity of prescriptions, and no needless overlapping of remedies, yet I thought in this case, as pilocarpine is only on its trial, I would only be consulting the interests of the patient in prescribing, in addition to the pilocarpine, remedies in common use in the disease. I prescribed iodide of potassium and mercurial inunction.

Since writing the foregoing the lad has recovered perfect vision of both eyes; the state of the fundus of each eye is satisfactory, and the pain in the head and sleepiness have been entirely removed.

I may digress here to state, as the result of my observation, that in children a limited meningitis is much more common than is generally supposed. Practitioners are too much in the habit of regarding meningitis as a disease which either exists in a severe form or not at all. They expect to find the full series of symptoms laid down in books, and if these do not occur in their due order they do not recognise the disease at all. I am satisfied, however, that meningitis often exists, and is only evidenced by a single symptom—viz., pain in the head. This may pass off, leaving no effect behind. Very frequently after a time, however, the vision fails, and the ophthalmic surgeon finds clear evidence of an optic neuritis or atrophy. Now, what more reasonable to suppose than that a limited part of the membranes at the base of the brain may be congested in a passing sort of way, or that this may be followed by a limited effusion affecting some part of the optic tract or central organ of vision.

Use in Sclerotitis and Sclero-corneitis.—I have used it in a number of cases of sclerotitis and sclero-corneitis with, I think, more than

average success, but as the disease is one so slow, and so variously influenced by heat and cold, season, residence, &c., I really do not feel justified in saying anything positive.

Use in Detachment of the Retina.—I come now, however, to a class of cases in which pilocarpine has, to my mind, been proven superior to everything hitherto tried, and, in fact, to be the only remedy worthy of mention at all. I refer to detachment of the retina. I am aware of only one case during a rather extensive practice of twelve years having got well. The detachment was small and peripheral, and indeed when what I considered a detachment disappeared, I began almost to doubt the correctness of my diagnosis. In only one case have I seen notable improvement by operation. In that case I removed a circular piece out of the sclerotic; and the patient, who, before operation, only discerned light from darkness, afterwards acquired so much vision that he could go about well in the daytime. For some time I have given up operation altogether, the hits were so few, and the misses so numerous. The experience of ophthalmic surgeons everywhere was just like my own. Medicines were practically useless. This was then a fair class of disease on which to try a new remedy. My attention was first directed to the subject by a paper, by Dr. Danioux, in the Paris *Journal d'Ophthalmologie.* The results reported by that gentleman seemed so opposed to all previous experience, and altogether so roseate, that I was rather sceptical. However, I tried the remedy, and I am glad to state that a fair proportion of the cases are greatly benefited. Many have improved far more than I could have reasonably anticipated.

Case V.—The lad before you has detachment. His case is rather anomalous. When I saw him first the tension of the left eye was quite glaucomatous. The glaucomatous process had apparently gone on for a long time. For three months, at least, he had had severe pain in and all round the eye, at times so bad as to cause fits. There was no anterior chamber, the lens apparently being quite in contact with the cornea, no iris whatever apparent at the upper part of the cornea, and only a narrow semilunar ring at the lower half of the circumference. I thought the disappearance of the iris was owing partly to atrophy and partly to its being hidden by the pushing forward of the lens. The vitreous was so cloudy that I could not make out by the ophthalmoscope anything of the state of the fundus. The sclerotic was distended and bluish in the ciliary region, with two little round projections below. He had correct perception of direction of light thrown on the eye

from a mirror in various directions; could count fingers at six inches. He stated that his vision within the last few days had been better. I questioned the propriety of attempting a sclerotomy or iridectomy. Either could only be done with difficulty, and very imperfectly. I admitted him to hospital. I was surprised to find, a few days after admission, that the tension of the eye had diminished to about the normal, coincidently with an increase in the size of the sclerotic projections. At the same time the media of the eye had cleared, and I detected easily a detachment of the retina affecting the whole of the lower half of that membrane, and hiding the disc. I could trace the upper retinal vessels close to their entrance in the disc. The sight had cleared somewhat; the detached retina was sensitive. I began to treat him with pilocarpine. There has been continuous improvement. The extent of the detachment has diminished so far that it is now of a narrow triangular form, with apex just at the disc. The disc can be easily seen. He counts fingers at ten feet.

Case VI.—This young man before you has suffered from detachment of the retina of the right eye for five years, and of the left for one year. When I saw him first I found the sensibility of the retina of each eye still well preserved. With right eye he could not count fingers; with left eye he counted fingers at one foot. He has been treated as I have told you, and now he can count fingers with the right eye at two feet, and with the left at ten feet. He can read also $8\frac{1}{2}$ Sn. at six inches. The result, considering the long continuance of the detachment, was quite unexpected. He purposes now working as a carter.

I shall only mention another case of detachment:—

Case VII.—A printer, upwards of sixty years old, always short-sighted, lost sight of right eye in the course of a day. He was a delicate-looking man, and much worn by domestic troubles of various kinds. Detachment of retina below, extending to disc. Began treatment with $\frac{3}{20}$ths of a grain, but found this produced giddiness, faintness, and sickness, copious perspiration, and salivation; subsequently injected only $\frac{2}{20}$ths, and that only occasionally. After the lapse of about two weeks' treatment there was scarcely a trace of detachment, and he could read the smallest type by gaslight. He was then about to return home, but I prevailed on him to remain for further treatment, to make the result more secure. Domestic cares, however, utterly upset his head and health. He was the most despondent man I ever met. The disease relapsed to some extent, and I was obliged to discontinue treatment and send him home.

But, you may ask, are the results obtained in this disease likely

to be permanent? I answer, I am not in a position to reply; time alone will test the improvement. At the same time I may remark that it is not improbable that the change in tonicity of the vessels and in the absorptive capacity brought about by this drug, and maintained for a length of time by its steady use, may remain even after the suspension of treatment. I shall, however, report after more extended experience.

Improvement of Function of Skin.—Some writers have noted great improvement in the nutrition of the hair; sometimes even a change of colour has been brought about. I have been treating a young lady for sclero-corneitis of a severe kind. She was troubled with coldness of the extremities and a general feeling of chilliness. She stated that her skin and hair were always dry, and that she never perspired. In this case I have used 5 or 6 minims daily for about three weeks. The drug produced all its usual effects—the chilliness and coldness of the feet have been relieved, her hair is no longer dry, her skin has become moist, and her complexion much improved.

Effect in Tonsillitis.—I have used pilocarpine in a number of cases of severe tonsillitis with results most satisfactory. In the first case the acute disease was of three or four days' duration, grafted on a chronic affection, and the right tonsil so much swollen that I really thought nothing would arrest the suppurative process. A single dose of $\frac{6}{20}$ths of a grain of pilocarpine completely cut short the disease. Afterwards, with the view of watching its effects in these cases, I admitted such as chanced to come before me (three altogether) as intern patients. They all seemed to me such as would go on to suppuration. The relief was immediate in every instance. I have found that patients who on admission were not able to swallow at all could do so very well shortly after a single injection. I have only had to keep the patients in hospital from one to three days. I cannot too strongly recommend you all to adopt this treatment.

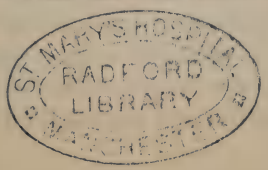
Dose.—Some of you, from what you have read in the journals, may be disposed to think you may use this drug rather freely. Even one grain seems to be regarded by some as not an extraordinary dose, and perhaps it may not be in special diseased conditions. For example, in cases of suppressed eruptive diseases, or in case of great vascular tension, it may be safe to give considerable doses; but, from what I have observed, I advise you strongly to feel your way. I have told you of a case in which

$\frac{2}{20}$ths of a grain in a man of sixty years old produced full effects, and $\frac{1}{20}$th of a grain more, excessive effect. Young persons of ten years old bear a larger dose often than old persons. For persons in the prime of life you will usually find $\frac{6}{20}$ths of a grain do all you require. Twelve-twentieths of a grain is the highest dose I have ever administered.

Mode of Administering.—When you wish a decided effect by far the better plan is to use a salt of pilocarpine, and inject it subcutaneously. In two or three minutes the full effect is developed; besides you should remember that half the virtue, perhaps, lies in its instantaneous action. The same dose administered by the mouth will usually not produce diaphoresis, and only acts slowly. You require to give a larger dose. I prefer the salt to the infusion of the leaves, because you can gauge the effects with almost mathematical accuracy.

Lacunæ in our knowledge.—We must all regret that in this country there is practically an end of all research into the physiological action of drugs by experiment on animals. We may conjecture that this drug causes contraction of the cerebral vessels, but surely it would be more satisfactory and give a more sure basis for practice if we were assured definitely what effect it had on the brain exposed to view.

What I have said to you raises also the questions: What is its action on the uterus and ovaries? What are its effects on the liver, spleen, and intestinal canal? I do not see how therapeutics is to be elevated into a science without careful experimental research. It used to be that the medical profession was satisfied with extraordinary combinations of drugs, hoping that some one of the many would hit the right nail on the head. Now we require precision. We look for active principles, and employ them in the expectation of observing definite actions on particular organs or particular nervous or vascular tracts, but how we are to employ with safety the numerous new and powerful agents which are daily brought to the notice of the profession, without some knowledge of their precise action on the lower animals, I fail to comprehend. We can only now endeavour to enlighten the Legislature, and hope for a compliance at no distant date with the reasonable requirements of the profession.



PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Applied Anatomy of the Nervous System, being a Study of this portion of the Human Body from a standpoint of its general interest and practical utility; designed for use as a Text-Book and a Work of Reference. By AMBROSE L. RANNEY, A.M., M.D. London: H. K. Lewis. 1881. 8vo. Pp. 500.

THIS work consists of a course of lectures delivered by the author in the University of the City of New York during the winter of 1880 and 1881. It is divided into a short introduction and four parts, which deal respectively with the brain, cranial nerves, spinal cord, and spinal nerves. In the introduction the author reproduces the celebrated axioms of Mr. Hilton as to the distribution of nerves, and frequently throughout the volume reference is made to these and other parts of Mr. Hilton's work on Rest and Pain.

In the chapter on the brain the author shows himself to be a strong advocate of the theory of localisation of cerebral functions, and follows generally the opinions of Ferrier in fixing the position of each so-called centre. He is very cautious in expressing any opinion as to the functions of the basal ganglia or corpora quadrigemina, but thinks that a crude sense of sight remains after removal of the cortical centre of vision, and that this is seated in the corpora quadrigemina.

After discussing the different functions which have been attributed to the cerebellum, the author points out how the problem is complicated by the numerous and close connexions which exist between this organ and other parts of the nervous system, and says:—"The intimate relation which this ganglion bears to these parts renders it a matter of extreme difficulty to discriminate clinically between the results of disease of the cerebellum and the effects of pressure created upon adjacent regions. When we consider how near the ganglia of vision, the points of origin of the third, fourth, and sixth nerves, and the various nuclei of the fourth

ventricle, are to the cerebellum, we can understand why careful observers are loath to accept symptoms referable to the eye or ear as positive evidence of cerebellar disease, and why vomiting, so often present, may not be attributed with equal force to pressure exerted upon the medulla oblongata. In point of fact we can only consider the symptom called 'cerebellar ataxia' and the presence of pain in the occipital region as of positive value in the diagnosis of disease of this ganglion, and even these may often be absent."

A very interesting and important section is that headed "The Surgical Bearings of Cerebral Topography." The guides given by Turner to enable the surgeon to determine the portion of brain underlying any part of the cranium are considered by Dr. Ranney as less practical and less easy to follow than those offered by Féré. Accordingly the division of the head by vertical lines erected on the horizontal alveolo-condyloid plane of Broca, and by horizontal lines drawn through the bregma, 45 mm. below this, and through the apex of the lambdoid suture, is adopted, and the relation of the different parts of the brain to these easily determined lines is pointed out and illustrated by a drawing. The author lays down in the form of propositions the various symptoms which should be held to indicate or contra-indicate the operation of trephining in injuries to the head.

The first part concludes with a general summary of our knowledge of the anatomy and physiology of the brain, and of the clinical deductions of practical value which may be drawn from such knowledge.

In the second part the cranial nerves are considered one by one; first the anatomy and physiology, and then the clinical points, which receive explanation from a knowledge of the normal structure and function. The optic nerve, naturally, comes in for a lengthened discussion. Among other matters the importance of a knowledge of the arrangement of the fibres in the chiasma is pointed out, and the following summary is given of the guides afforded by partial blindness of the retina in making a diagnosis of the situation of cranial tumours:—

"1. *Total amaurosis of one eye* indicates pressure between the chiasma and the eye affected, which has destroyed the conducting power of both the decussating and longitudinal fibres of the nerve.

"2. *Total amaurosis of both eyes* seldom occurs in tumour; but if it be dependent upon a tumour, it must affect the chiasma itself and have completely destroyed it.

"3. A loss of vision in the *nasal half* of both eyes indicates the existence of a tumour either in front of or behind the optic chiasma, which affects only the decussating fibres of each tract.

"4. A loss of vision in the *nasal half* of one eye and the *temporal half* of the other indicates pressure upon the *optic tract* upon the side where the temporal half of the retina is destroyed.

"5. A loss of vision in the *temporal half of both eyes* indicates *senile degeneration* of the vessels forming the circle of Willis which are creating pressure upon the outer side of each of the optic tracts."—p. 126.

In the chapter on the third nerve a table is given showing the muscles by whose action each of the movements of the eyeball is effected; and it is pointed out that while each of the up and down and horizontal motions is made by the contraction of one or, at the most, two muscles, for each of the oblique movements at least three muscles must act together; and further, that to antagonise either of the oblique muscles two muscles must contract.

In paralysis of one of the ocular muscles the patient often carries his head in an abnormal position, so as to avoid the production of double images on the two retinæ. The simple rule is given to determine the position which the head would assume in any case, or to determine the muscle paralysed from the position of the head. "In paresis of any of the ocular muscles the head is so deflected from its normal position that the chin is carried in a direction corresponding to the action of the affected muscle."

In the section on the pneumogastric nerve we find a curious confusion between the cardio-inhibitory fibres of this nerve and the "depressor nerve of the heart." Both on page 245 and on page 265 it is evident that the author completely misunderstands the function of the depressor nerve, which is not to "decrease the beats of the heart," but to lessen blood pressure by inhibiting the tonic action of the splanchnic nerves on the abdominal blood vessels. We are surprised also at finding no mention of the influence exerted on the secretion of the salivary glands by the chorda tympani and Jacobson's nerves.

In the third part a good account of the anatomy and physiology of the spinal cord is given. Its diseases are divided, as is now usual, into systematic and non-systematic or focal. The former are again subdivided into systematic lesions of æsthesodic system, including sclerosis of the column of Goll, and sclerosis of the column of Burdach (locomotor ataxia), and into systematic lesions of

kinesodic system, including sclerosis of the column of Türck, sclerosis of lateral columns, amyotrophic lateral sclerosis, myelitis of the anterior horns of grey matter (atrophic spinal paralysis), poliomyelitis, progressive muscular atrophy, and central myelitis. The focal lesions are subdivided according to the region of the cord affected.

The fourth part deals with the spinal nerves. Their anatomy is very fully given, and the symptoms of the different neuralgias, anæsthesiæ, spasms, and paralysis, very completely described and explained. On the whole we think this is the best portion of the work.

The volume is illustrated by 179 well-executed engravings, the most of which are taken from the works of Hirschfeld and Sappey. The print and paper are good, and there is a sufficiently copious index.

This is a book which in our opinion cannot fail to be useful, as showing that a knowledge of anatomy and physiology is not a mere ornamental accomplishment, but an acquisition whose practical application may be made in almost every case the practitioner is called on to treat.

Experimental Chemistry for Junior Students. By J. EMERSON REYNOLDS, M.D., F.R.S.; Professor of Chemistry, University of Dublin, &c. Part II. Non-Metals (with an Appendix on Systematic Testing for Acids). London: Longmans, Green, & Co. 1882. Pp. 279.

IN the number of the Journal for last May we published a notice of Part I. of this work, and described its admirable plan. After examination of the part on the same system, now issued, we can only repeat our approval of it, and congratulate the author on the originality of his method, and the manner in which he has carried it out. Most of the experiments described are illustrated by excellent woodcuts, and are such as a student could perform for himself. In every respect the work is an agreeable contrast to the numerous superficial crams and so-called aids to chemistry and other branches of medical science which now abound, and which are detrimental alike to the student and to the acquirement of any sound knowledge. Part III. of the work will deal with the Metals, and Part IV. with Organic Chemistry.

Essentials of the Principles and Practice of Medicine. A Handbook for Students and Practitioners. By HENRY HARTSHORNE, M.D.; late Professor of Hygiene in the University of Pennsylvania. Fifth Edition, revised and improved. London: Smith, Elder, & Co. 1881. Pp. 669, with 144 Illustrations.

"HARTSHORNE'S Essentials" occupies a position midway between such works as "Tanner's Clinical Medicine," "Fenwick's Practice," and "Carter's Elements," and the standard text-books of Aitken, Watson, Niemeyer, Roberts, and Bristowe. Its scope is nevertheless a wide one, and although its matter is condensed, it contains sections on subjects of importance—*e.g.*, on diseases of women, on eyesight, its examination and correction, and on metrical prescribing, &c., not treated of in the other works we have named. The last edition was published in 1874. In this, the fifth edition, numerous additions have been made, several new subjects have been written upon, especially in connexion with the pathology of the nervous system, the illustrations have been considerably increased, and many new formulæ for the administration of medicines have been introduced.

After a brief but interesting introduction, showing the different systems of medicine that have been in vogue, comes Part I., "The Principles of Medicine," including sections on "General Pathology," "Semeiology," "General Therapeutics," and "Nosology." This part occupies nearly 200 pages, the section on Semeiology being especially commendable, and comprising, under the sub-heading "Physical Diagnosis," a description of the laryngoscope, ophthalmoscope, and sphygmograph; but no reference is made to the spirometer, the æsthesiometer, or the dynamometer. Part II. is taken up with "Special Pathology and Medicine," the classification of disease followed being more clinical than scientific. The author exhibits by his work not only an extensive acquaintance with disease and with medical literature, but also an independence of thought which he is not chary in expressing. While thus endeavouring, as he says—and we must add successfully—to do justice to recent medical improvement and progress, he still "remains in the minority" upon a few subjects of current opinion. He objects especially to the overrated value, as he considers it, that is now given to physiological or experimental therapeutics—toxico-therapy, as he would call the system. Of the suggestive value of experiments with medicines upon animals he has no

doubt, but he objects to this method being permitted to rank higher than, or equal to, clinical observation (the true experimental medicine), first, because of the frequent differences between the effect of the same agent upon man and upon animals, as well as amongst animals themselves, and, secondly, from the difference in the action of drugs in states of health and states of disease, whether of men or of animals. He has, he asserts, no desire to ignore or depreciate the *suggestiveness* of experiments upon animals, but he denies, for example, the truth of the physiological theory of Brown-Séquard based upon the result of section of the cervical sympathetic, on the ground that all facts of vivisection are traumatic or pathological. In another place he goes so far as to say that the "net result" of experimentation upon the brain and spinal cord of living animals during the last twenty years, has been to throw the whole subject of the pathogeny of motor as well as of sensory paralysis into inextricable confusion. Dr. Hartshorne believes also that the idea of a specific virus existing in tubercle is an untenable theory, on the grounds apparently that tuberculosis can be caused by the inoculation with diphtheritic exudation, and even with inert substances. M. Toussaint's researches seem, however, to show that the disease so caused does not reproduce itself by inoculation of the seemingly tuberculous matter thus obtained; whereas true tuberculosis taken from man and given to the cow, pig, or rabbit, can, Toussaint asserts, reproduce itself in an indefinite series, with absolutely identical characteristics, and can be inoculated from one animal to the other without the virus becoming weaker. Cohnheim and Salomonsen have also succeeded in distinguishing real tubercular matter from all other caseous secondary and chronic inflammatory products, especially scrofula, by the undoubted miliary tuberculosis of the iris, with subsequent general tuberculosis, produced in rabbits and guinea-pigs by introducing into their anterior eye chamber a minute particle of human tubercular matter, and by nothing else.

Turning to Part II. of the work we find, for the most part, a brief and clear description of each disease, with its causation, diagnosis, pathology, and treatment. In connexion with pericarditis, after a description of its symptoms and physical signs, the remarkable and erroneous statement is made that the symptoms of this disease and those of endocarditis are the same, and that *friction-sounds* (Italics in original) may occur in both. Dr. Hartshorne does not mention, either by name or by synonym, the

croupous or the catarrhal forms of pneumonia, or refer to the researches of Heidenhaim, Juergensen, and others as to the specific nature of the first variety. He believes that the large majority of cases of pneumonia are simply inflammatory, and that the "pneumonic fever" theory—only thus casually mentioned—has influenced treatment disadvantageously. His treatment of the disease is decidedly an "antiphlogistic" one. In acute pleurisy also in young and vigorous persons with high fever and constant severe pain, early bleeding, he says, should be the general rule, followed by leeches or cups, free purgation, and tartar emetic with opium. And as soon as the heat of skin has abated, if the pain continues, a large blister is to be applied over the affected part. We have no confidence in such heroic measures in this country, and have successfully treated many cases of acute pleurisy without their aid. With these exceptions, Dr. Hartshorne's therapeutics are good; and the large collection of formulæ he appends—magistral, metrical, and alimentary—will be found useful, and in many cases novel. Many of the most recent additions to therapeutics are referred to through the text; and, while we differ with the author in some of his views, we agree with him that "science should suggest remedies for experience to prove; empiricism may thus be made rational, and rationalism in medicine may thus become practical." The book is well written, well illustrated, and well indexed, and will, we doubt not, meet with as much approval as its former editions have secured.

Rudolf Virchow. An Address introductory to the Course of Lectures of the Term 1881–82. By A. Jacobi, M.D. New York. 1881.

There is probably no living man who has exerted so powerful an influence on medical thought as Professor Virchow has done; and we agree with Dr. Jacobi in thinking that there is nothing from which we can learn more than from the life of a great man. We consider it, therefore, a wise choice which made a history of the life and work of Virchow the subject of an introductory address to students of medicine. In this address notice is taken not only of the scientific work which Virchow has accomplished in pathology and other sciences, but of the wide and benevolent sympathy which has caused him, all his life through, to take such a prominent part in public affairs and in everything which tended to the good of his country. Dr. Jacobi does full justice to the wise modera-

tion which has made Virchow withstand the too rapid acceptance of modern theories—a position which has brought him into collision with some of his former pupils, who have made it plain that they consider their old master as a man past his labour and no longer able to keep pace with modern thought. For this enlightened conservatism Dr. Jacobi has nothing but praise, and he does not spare Klebs and the other scientific opponents of Virchow; but his hardest blows are reserved for Prince Bismarck, the denunciation of whom is quite dramatic in its intensity. The address is a thoroughly appreciative one, full of interest, and will well repay perusal.

The Liverpool Medico-Chirurgical Journal. No. 2. January, 1882. Liverpool Medical Institution, Hope-street. London: H. K. Lewis. Pp. 194.

THIS is the second number of a Journal published twice a year, in January and July. It consists of Original Articles, Reviews, the Transactions of the Liverpool Medical Institution, Clinical Records, and the Proceedings of the Lancashire and Cheshire Branch of the British Medical Association, and worthily reflects the experience and opinion of the profession in the third largest city of the United Kingdom—a city also which, in the words of one of its most eminent surgeons, "is not desirous of taking any other than a first position amongst her contemporaries."

Dr. Martin Oxley's paper on "Pleurisy with Effusion, its Diagnosis and Treatment by Withdrawal of the Fluid," is a valuable practical paper. It is part of a discussion on the subject opened by Dr. Waters at a meeting of the Liverpool Medical Institution, and published, along with the remarks of the speakers, elsewhere in the Journal. Dr. Oxley, who has had much experience in the treatment of pleural effusion, and who is impressed with the value of paracentesis "in the proper case and at the proper time," thinks that too free use has been made of the aspirator, by employing it in cases which would have recovered perfectly well without it. When it has been decided to withdraw fluid from the chest, his experience is against forcibly withdrawing it by the aspirator. He believes in making use of the natural elasticity of the chest walls and displaced organs as a means of driving out the fluid, and uses Dr. Southey's capillary tube for the purpose. We adopted this method ourselves in a case of

pleural effusion some twelve months ago, and can corroborate Dr. Oxley as to the excellent results thus obtained. We know also of other cases in this city in which the same method has been successfully employed. Dr. Oxley recommends that the cannula should not be allowed to remain in the chest for more than three or four hours. If kept in longer a fistulous opening may result. A careful watch should be kept upon the drip, and when it becomes slow the cannula should be removed and the puncture hole sealed by a small piece of cotton soaked in collodion. In future Dr. Oxley intends to use two tubes, so as to secure a quicker removal of the fluid than one would effect. A table of 59 illustrative cases—32 of which were in Dr. Oxley's own practice—is appended to this instructive paper.

Dr. Rawdon records an exceptional case of irreducible dislocation of the right femur on the dorsum ilii, which occurred spontaneously during an attack of enteric fever. The head of the femur was cut down upon and removed by dividing the neck of the absolutely normal bone. Two months after the operation the patient (a girl aged eight) could walk quite naturally and without crutches.

Dr. Carter contributes a paper "On some Curable and Relievable Forms of Adult Spinal Palsy" (anterior spinal paralysis of Duchenne), illustrated by cases, and demonstrating the advantage to be derived from early treatment. In the acute stage—a stage having probably as its anatomical character a condition of hyperæmia of the cord, and marked by exalted sensibility, fibrillary tremors, &c.—means calculated to diminish hyperæmia (*e.g.*, ergot internally, and Charcot's white-hot cautery along the spine) are perhaps the best. As soon as paralysis and wasting have set in, persevering treatment will often be followed by immense benefit even in cases of long standing. The indications then are to nourish the nervous centres and the muscles by giving strychnia internally and hypodermically, phosphorus, Faradism and shampooing of the muscles, and the constant current to the cord.

In some "Notes on the Surgery of Bursæ," Mr. Mitchell Banks, Surgeon to the Liverpool Royal Infirmary, advocates the early removal by double lateral incision under antiseptic precautions of all suppurating patellar bursæ as an effectual means of drainage, and so of accelerating recovery. In suppuration of the olecranon bursæ also (five cases of which are related), he lays the abscess open, under ether, from end to end. The usual pricking and

lancing suitable for boils and small abscesses is, he says, of no use here if it is desired to save the patient with certainty from the risks of a cellulitis. In two of the cases related such a cellulitis did occur. Two cases of inflammation of the trochanteric bursæ, which from its situation usually escapes injury, are also given, and its diagnosis and treatment are discussed.

Dr. Wallace gives the conclusion of his paper in the previous number of the Journal on "The Radical Cure of Prolapsus of the Uterus." He records thirteen cases; and in these, with one exception (in which death was due to septicæmia), "not one single case of failure has as yet been reported."

In the portion of the Journal devoted to the "Transactions of the Liverpool Medical Institution" there is an important discussion on the radical cure of hernia, with addresses by Mr. Alexander—who advocates an operation the essential part of which consists in ligaturing the neck of the sac close up to the internal ring—and by Mr. Spanton, of the North Staffordshire Infirmary, who obliterates the sac by transfixing it by means of a screw.

Two instructive cases presenting symptoms of intestinal obstruction, and due to impaction of large gall-stones, are reported. In one, after suffering nineteen days, a gall-stone, 5 inches in circumference, 2½ inches in its long axis, and weighing 250 grains, was passed. The physical peculiarities in this case were—absence of hepatic tenderness, intense umbilical pain, obstinate and persistent vomiting of an enormous quantity of peculiarly offensive fluid, and absence of jaundice. In the other case the calculus measured 3¼ inches in circumference, and weighed 263 grains. It was passed per anum by a lady after symptoms of intestinal obstruction with stercoraceous vomiting for three days. The previous symptoms had been of a vague character, and pointed to dyspepsia.

We trust the Journal will obtain the wide circulation which, judging from the current number, it undoubtedly merits.

A NEW AND CHEAP DISINFECTANT.

THE following is given in the *Progress of Science*:—Dissolve half a drachm of nitrate of lead in a pint of boiling water; also two drachms of common salt in a bucket of water; pour the two solutions together; allow the sediment to precipitate, and the clear supernatant fluid will be a chloride of lead. This will deodorise and disinfect sinks, water-closets, or drains, and a cloth dipped into it will sweeten a fœtid atmosphere.—*Australasian Med. Gaz.*

BRADFORD LIBRARY MANCHESTER

PART III.

HALF-YEARLY REPORTS.

REPORT ON NERVOUS AND MENTAL DISEASE.[a]

By Ringrose Atkins, M.A., M.D.; Medical Superintendent, District Lunatic Asylum, Waterford.

I. INSANITY IN GENERAL.

Complaints by Insane Patients.—At the annual meeting of the Medico-Psychological Association, in August last, Dr. J. A. Campbell read a very interesting and practically important paper on this topic, which is not infrequently brought before the minds of asylum physicians on their daily rounds through the wards. Dr. Campbell copiously illustrates his remarks with numerous cases drawn from his own immediate experience, or to which his attention had been drawn, and summarises the conclusions drawn from their study as follows:—

1. That tact, experience, and sagacity are necessary to distinguish between the complaints that should be thoroughly sifted and those that should be listened to and made light of.

2. That complaints of personal violence should be thoroughly inquired into, and that an examination of the person of the complainant is the surest and most reliable mode of arriving at facts.

3. That evidence of violence by bruises, as shown by extent, colour changes, and disappearance of ecchymosis, is much modified by the nervous state, age, and condition as to fatness of the patient, and this to an extent scarcely to be credited by those who have not had good opportunities for observing it.

4. That "cutaneous discolorations in the insane, resembling bruises," as pointed out by Dr. Blandford, are well recognised.

5. That occasionally, but comparatively rarely, ecchymosis—true, and not to be distinguished from the result of violence—occurs from disease of the blood-vessels.

[a] The author of this Report, desirous that no contribution to the subject of Nervous and Mental Disease should remain unnoticed, will be glad to receive any publications which treat of it. If sent to the correspondents of the Journal, they will be forwarded.

6. That the complaints of patients may be well founded.

7. That patients, however, frequently make false charges:—1st, as the result of ill-feeling to one attendant or official; 2nd, the result of general ill-feeling to those looking after and detaining them; 3rd, the result of delusions; 4th, from an hysteric state, love of notoriety and medical attention; 5th, the result of a confused state during the early part of the attack, when perception is impaired; 6th, the result of combined soreness after an epileptic fit or fits, and the confused state described above.

Classification and Definitions of Insanity.—Dr. J. G. Kiernan, of New York, in a paper published in *Gaillard's Medical Journal*, gives the following classification:—Mania, acute melancholia (lypemania), acute periodical insanity, circular insanity (*folie circulaire*), epileptic insanity, hebephrenia, katatonia, monomania, chronic mania with confusions, chronic mania with imbecility, progressive paresis, and senile dementia. The monomania of this classification is not that ordinarily meant by the term, but corresponds to the primary intellectual insanity of other authorities, and the *primäre Verrücktheit* of the Germans. Kiernan defines insanity as being a morbid condition produced by disease of the brain, which perverts the mental relations of an individual to his surroundings, or to what, from his birth, education, and circumstances, might be anticipated to be such surroundings. Dr. Charles Mercier (London), in a paper on "The Nature of Insanity" (*Journal of Ment. Sci.*, Jan., 1882), formulates, as the definition of insanity he would propose, the statement that, "from whatever point of view regarded, insanity is found to be a failure in the process of adjustment of the organism to its environment"—a definition coinciding closely with that of Dr. Kiernan, and with the view expressed by Dr. Hughlings Jackson, who incidentally alludes to insanity as a "loss of the most highly special adjustments of the organism to its environment."

Moral Insanity.—Dr. C. H. Hughes, in a paper presented to the International Medical Congress, published in the *Alienist and Neurologist*, of which he is editor, and since reprinted, supports the view of the definite existence of moral or affective insanity, as an independent form of mental derangement—stating that insanity of the emotions, propensities, and passions, in which the intellect, if at all disordered, is not appreciably so, or only momentarily so, by being in abeyance, or being unable, through some want of connexion of the will, or controlling power of the latter over the

impulses and passions, is a fact, however it may clash with theories of the so-called unity of mind. All observation of the varying degrees of emotional, impulsive, and intellectual life in different persons, and in the same person at different ages of life, attest the possibility of disorder of the emotions, propensities, or passions, without more appreciable lesion than we see in persons who are regarded as right-minded. Though insanity is marked generally by change of character, that change is seldom manifested in augmenting the power of the intellect and the will over the emotions or passions. On the contrary, the latter often subvert the former. Usually the disease, beginning with moral or emotional perversion, gradually involves or undermines the reason and judgment. It is thus that in the early stages moral, emotional, and impulsive disorder is mainly divorced from the intellect, and what begins with an insanity of the feelings, passions, and propensities, usually goes on (if not arrested by timely medical interference) to the graver forms of more general mental involvement. These cases may even pass, if not cured, into the stages of delusion and dementia—a fact which has led some writers to doubt their existence unless accompanied with intellectual involvement, but which really proves the kinship of these contested forms of mental derangement, even where neither delusion nor other intellectual lesion appears, with universally recognised forms of insanity, just as the insane heredity of moral mania often establishes in our minds the fact of insanity as contradistinguished from uncomplicated vice, when we are in doubt. Those who deny the existence of moral insanity insist that there always exists a certain degree of intellectual acquiescence that entitles it to be termed intellectual insanity, though that intellectual perversion may be, and often is, no greater than that which is found in the naturally immoral and depraved; but, if one concedes this, there yet remain cases of moral and emotional disease where the intellect not only does not acquiesce in, but actually discountenances and seeks to be restrained from, the morbid impulse or to subvert the morbid feeling. Momentary impulses and suggestions of a morbid kind obtrude themselves, as is well known, upon many healthy minds, like the vague feelings of unreasonable unrest and depression which obtrude unbidden into the neural chambers of the cerebral cortex. Facts like these show the capability of the mental faculties to become partially involved in aberrant action without notable derangement of the reason. Not to recognise moral insanity

in the present state of cerebro-mental pathology would, in certain instances, prove disastrous to the rights of the insane before the courts, and to their welfare elsewhere.

Illusion, Hallucination, and Delusion—a Differential Study for Forensic Purposes.—The same author, in the *Alienist and Neurologist* for July, 1881, defines and compares these morbid mental conditions thus:—The term illusion in medical language, he says, means an erroneous, imperfect, or *mistaken* perception, while hallucination signifies an entirely *false* perception of those centres in the brain where the external impression made upon and transmitted from the eye, the ear, the nose, or lips, or tongue or skin, is recognised and individualised or differentiated. The person having an illusion sees, or feels, or hears, or smells, or touches, or tastes *something*, but the impression received within the brain is different from that of the natural external object, or as the person himself naturally perceives it. It is not the real object, for no one else sees, or hears, or feels the same impression, and formerly he did not. An hallucinated person neither sees, nor hears, nor feels, nor touches, nor tastes, nor smells *anything* in reality. *No external objects whatever excite his deranged impressions.* They arise solely within the brain, and are constructed there exclusively and entirely without external excitation. The phenomena, though apparently objective to him, are solely *subjective*, and the mind, while cognisant of the apparent reality of these images, yet reflects and knows that they cannot be and are not real. Appearing to be real, they are still realised as the baseless fabrics of which visions are made. Delusions as compared with illusions and hallucinations are *erroneous* or *false judgments* formed by the mind, as distinguished from the foregoing erroneous or false *perceptions;* the mind does not recognise its unreal perceptions, but believes in and acts upon them as verities, and they so dominate the thoughts, feelings, and actions of their unfortunate possessor as to change his individuality as compared with his former and natural self, and thus to make him insane.

On Megalomania (*the "Délire de Grandeurs"*).—Dr. Achille Foville, in a communication read in the Section of Mental Diseases at the International Medical Congress, states that there are two distinct forms of grandiose delusions—(1) Where the delusions are either fleeting, inconsistent, and generalised; and (2) where they are systematised and permanent (the mégalomanie of Dagonet). The first variety is best known as a symptom of general paralysis,

but it may also occur for a short time in the course of ordinary mania, of organic brain disease, and of alcoholism. In all these cases it is probably connected with hyperæmia of the cortex of the brain. The second variety is always chronic in its evolution, and is almost always incurable, the grandiose delusions gradually fading away into dementia. It is always accompanied with other symptoms, usually hallucinations and delusions of persecution, which have usually preceded the belief that the patient's personality is changed to one of greater wealth and importance. It is therefore closely connected with melancholia.

In connexion with these views of M. Foville, I may here take note of a paper published by M. Baillarger in the May (1881) number of the *Annales Méd. Psychol.*, on "Délire de Grandeurs in Organic Disease of the Brain and Spinal Cord," in which he records six cases of organic disease of the central organs of the nervous system, resulting from gross hæmorrhage or softening, accompanied by paralysis—hemiplegia or paraplegia—and ataxy, in which a condition of mental exaltation with grandiose delusions appeared, and lasted often for many months and even over a year. In the six cases the autopsical examination revealed none of the localised "cortical adhesions" which are now regarded as characteristic of true general paralysis of the insane. M. Baillarger considers that in this malady there are two distinct groups of symptoms—(1) those of progressive paralytic dementia, which sometimes run their course without any appearance of the delusions of grandeur, and which have definite anatomical lesions associated with them; and (2) those in which the grandiose delusions, of which the exact ætiological factors are still unknown, hold sway and are constantly varying in character, being for the most part absurd, incoherent, and fantastic, but possessing a distinctive existence and mode of development. These delusions are most frequently found amongst general paralytics, but they may occur independently of it in connexion with various other gross cerebral and cord lesions. In both class of cases the mental exaltation may disappear completely, though the progressive paresis in the former can never be arrested permanently—it may indeed show decided remissions, suggesting hope of recovery, but in such instances, however, though the mental disturbance may have almost entirely cleared away, and the paresis shown considerable amendment, yet the patient never regains normal health, either mental or physical, and a recurrence of the disease may be predicted sooner or later.

II. ANATOMY AND PHYSIOLOGY OF THE NERVOUS SYSTEM.

The Brains of Criminals.—Dr. Benedikt, of Vienna, exhibited at the International Medical Congress fifty preparations of the brains of criminals, from the minute examination of which he sought to draw certain deductions as to peculiarities in their external anatomical configuration. This peculiarity—termed the "law of atypié"—consists mainly in the general coalescence of the typical fissures and in the general appearance of the fissure arrangement which one sees in the various classes of mammals. In commenting on this communication the editor of the *Alienist and Neurologist* naturally remarks that the number of examples studied are too few upon which to found a law of this kind as applicable alone to the criminal class, especially without an equally diligent search for similar atypic crania among the remaining large class of irregular-lived non-criminal persons, and in view of the fact that quite a similar atypié may be found in others than recognised and detected criminals; and in view also of the well-formed brains of some noted criminals executed for capital offences which have been examined and described. The successful planning, execution of, and escape from the consequences of many forms of crime require such complex movements that we should not *à priori* expect to find a general coalescence of the typical fissures, or a mammalian fissural type, such as Benedikt has found in the limited number of brains of the criminal class examined, and it would appear that his deductions can apply only to the caught and convicted criminals rather than to those who have been skilful or cunning enough to evade the law.

Distribution of Giant Pyramidal Cells in the Cortex.—"In a critical digest of the latest publication of Betz on the cortical structure, Bevan Lewis points out in how many respects Betz was really anticipated by Meynert. In stating that prior to the appearance of this memoir of Betz (that under criticism) these great cells (the giant pyramids) had been noted by several observers, and had been regarded as 'hypertrophied brain cells,' he fails to refer to the authority who first asserted their identity. This was done in a review of the Transactions of the International Medical Congress at Philadelphia, published in the January (1878) number of the *Journal of Nervous and Mental Diseases.* It is also remarkable that the English observer seems to be altogether unconscious of the existence of a paper by Graeme Hammond establishing the existence of giant cell nests in other parts of the brain than those

to which Betz limited them. Bevan Lewis insists that the general cortical type is six-layered and not five-layered. He divides the fourth layer of Meynert into a granule layer and a ganglionic layer. This division we cannot but consider unfortunate, as the largest pyramids are found right among the granular *columnæ*, and we feel convinced that a study of the transition of the frontal into the eight-layered type will convince the investigator that the large pyramids are confined in their distribution to the granular stratum or its homologues. If it is correct that the granular layer represents the sensory recipient field of the cortex the location in that layer of the gigantic motor cells is in anatomico-physiological harmony with the observations of Munk and Exner, that the 'tactile areas' of the cortex seem to be topographically identical with the 'motor centres' of the corresponding periphery."—(Editorial Notes, *New American Journal of Neurology and Psychiatry*). [This Journal, I may observe, is the most recent addition to American periodical neurological literature. It is edited by Dr. M'Bride, with whom are associated Drs. L. C. Gray and E. C. Spitzka, the latter of whom is now one of the foremost authorities on the Histology of the Brain. The first number—published in February of the present year, and to be continued quarterly — contains several interesting original papers, and is replete with extracts and critical digests of the most recent contributions to every branch of neurological science from Europe and America. The present is, and future numbers for some time will be, rendered additionally valuable by the publication, as a supplement, of the W. and S. Tuke Prize Essay on "The Somatic Ætiology of Insanity," by Dr. Spitzka, which is now for the first time given to alienist physicians, with additions embracing the author's most recent investigations. This Journal may be regarded as a valuable addition to the several high-class periodicals devoted to this branch of medical science emanating from the city of New York.]

A New Cortical Centre.—Dr. Graeme M. Hammond, in a paper read at the New York Neurological Society (*N. Y. Med. Record*), has studied the location of the giant cells of Betz in the brain of the cat. He finds that they are not localised, as Betz has stated, but were less numerous near the sulcus cruciatus than posteriorly to it, and he has even found them not far from the base of the brain. The largest group of these cells he found in a locality not determinately fixed by physiologists as a motor centre—in the first

primary arched gyrus, between the sylvian and the anterior sylvian fissures. It is nearer to a locality which Ferrier designated as a centre—excitation of which caused partial divergence of the lips—than to any other discovered motor centre; but it does not correspond exactly to that. The cells here are more ovoid or circular than those of Betz and Mierzejewski, which are pyramidal, and they are even longer than the latter.—(*Am. Jour. of Nerv. and Ment. Dis.*)

Cortical Centres of Vision.—Dr. J. C. Dalton (*N. Y. Med. Rec.*) has repeated Ferrier's experiment of destroying the angular gyrus in monkeys and dogs, and with the same result—blindness of the eye on the side opposite the hemisphere of the brain operated upon. But he found the blindness persistent instead of temporary, as was the case with Ferrier's monkeys. He deduces the following conclusions:—

1. Extirpation of the angular convolution causes loss of visual perception on the opposite side.

2. This operation is not followed by any disturbance of the intelligence, attitude, power of locomotion, or general sensibility.

3. It does not interfere with the local sensibility of the retina or conjunctiva, the reaction of the pupil to light, or with the normal consentaneous movements of winking. Its effects, therefore, are confined to the exercise of visual sensibility.

In this connexion I may remark that the results of the most recent investigations tend to show that the visual cortical centre occupies a much wider area than that in which Ferrier at first localised it. Ferrier has now found it necessary to modify somewhat his formerly expressed views, and to include a considerable portion of the posterior lobes (occipital gyri) in the area of the visual centre. Munk, in describing his experiments on localisation, before the Physiological Society of Berlin (*Biologische Centralblatt*), states that in the dog the larger portion of the occipital lobe has the function of a "visual sphere"—that is, in it occur the central changes on which the function of sight depends. It is the ultimate destination of the optic fibres, according to the following arrangement. The greater part of the left retina is in connexion with the right visual sphere; only the most lateral portion, not over a quarter of the whole retina, measured horizontally, is in connexion with the visual sphere of the same side. That of the right eye is correspondingly connected with the left side of the brain. The distribution of the fibres is so arranged that the

retinal and cortical terminations in the opposite hemisphere are inverted, so that what is on the right in the retina is on the left in the cortex, and what is above in the former is below in the latter. Extirpation of any one portion of the cortical visual tract renders the corresponding portion of the retina insensible; extirpation of one visual sphere blinds the eye on the opposite side, except its outermost part; extirpation of both cortical visual tracts causes complete and permanent blindness. In each visual tract is a central portion, characterised by the peculiarity that its extirpation produces a loss of visual memory in the opposite eye—that is, the dog still sees but does not recognise its food, &c., any more. This visual appreciation may become later restored. Munk distinguishes between this kind of visual loss and ordinary loss of sight from injury to the cortex, and calls the former psychic blindness (*seelen Blindheit*) and the latter cortical blindness (*rinden Blindheit*). This spot, destruction of which causes psychic blindness, contains also the central terminations for those parts of the retina for the fixation of vision—corresponding to the fovea centralis in man. In the temporal lobe is situated the auditory cortical tract. This also contains a special spot, extirpation of which causes psychic deafness—that is, the dog still hears, he pricks up his ears at a sound, but he no longer comprehends what it means. The touch sense has also its region in the cortex, and indeed this "sensory sphere" involves nearly the whole of the convexity that is not occupied by the visual and auditory tracts. In this can be still further distinguished the subdivisions corresponding to different parts of the body, especially those for the anterior and posterior limbs, the head, and eye, ear, neck, and back regions. All these lie in the anterior half of the cortex, and show an arrangement that makes a relation between those of Munk and Hitzig appear certain. In his experiments on monkeys Munk obtained results corresponding to those obtained in experimenting with dogs.

In the Section of Physiology at the International Congress, during the discussion on Prof. Goltz's now celebrated dog, and Prof. Ferrier's equally celebrated monkeys, Prof. Gerald Yeo mentioned the case of a monkey which he had under observation for a year, after having destroyed portions of the cortex aseptically, involving both posterior lobes and the angular gyri, in which perfect blindness resulted until death, without any indications of paresis; and in an animal which had the superior temporo-sphenoidal lobulation destroyed in both hemispheres, while sight,

motion, and sensation remained perfect, total deafness resulted, which was demonstrated by the absence of any start or notice being taken when a percussion cap was exploded near it. These results agree with those of Prof. Munk, except that the visual centre in Gerald Yeo's monkey was even more extensive in area than that allowed for it by Munk.

Arrested Development of Optic Thalamus following Cortical Lesions.—Monakow publishes in the *Archiv für Psych.* an account of experiments made upon two rabbits, with the view of determining the relations between certain sensory areas of the cortex and the infra-cortical ganglia, in the hope of complementing the recent researches of Munk. At first the method of Flechsig was made use of, and fœtal brains at different ages were examined. The author merely says of these results, in a general way, that they partly agreed with the observations which are to be described, and partly completed the latter. In both rabbits a certain small portion of the cerebral cortex was removed with scissors. The first animal was killed about nine months, the second eleven months after the operations. From his experiments Monakow adds to Gudden's assertion that the normal development of the thalamus opticus depends upon the integrity of the corresponding cortical field, and makes the further statement that, by the extirpation of circumscribed portions of the rabbit's cortex, isolated atrophies of nuclei of the thalami can be brought about. He also states that the region which Munk has regarded as the sensory centre for the ocular protective apparatus must have more extended functions, inasmuch as its destruction leads to degeneration of tracts leading into the spinal cord. In the second rabbit a spot of the cortex, answering to Munk's centre of vision in the dog, was removed. This corresponds to the centre, irritation of which, according to Ferrier, produces closure of the eyelids. After killing the animal the lateral stratum of the outer nucleus of the thalamus was found entirely undeveloped—the rest of the nucleus was normal. The corpus geniculatum externum was very greatly atrophied. The portion of the internal capsule corresponding to these atrophied nuclei was entirely wanting. One left anterior bigeminate body was slightly flattened. One transverse peduncular tract had entirely disappeared. One optic nerve was also somewhat smaller than the other. The tract of degeneration through the corona radiata and the internal capsule corresponded to those in man and the higher mammalia, which lead from the pulvinar and the external

geniculate body into the occipital region—in other words, the fibres of Gratiolet. As in both rabbits the internal geniculate body had remained intact, Monakow believes, as do Gudden, Fovel, and others, that this ganglion has no intimate relation with the retina.

The Influence of the Circulation upon the Nervous System.—This was the subject of Dr. Moxon's Croonian Lectures for 1881. One of the first questions considered was the means by which the blood-pressure in the brain is regulated. These are (1) the cerebro-spinal fluid, (2) the suction power of the skull, and (3) certain automatic mechanisms of the blood-vessels. These automatic mechanisms are twofold—the first is the pressure of the chorioid plexus in the cornu of the fourth ventricle, on the roots of the pneumogastric nerves. The fact of the pressure is proved by the disconnexion of the two parts in early life, and their firm union in later life, especially in cases of chronic distension of the ventricles of the brain. The effect of such pressure is shown both by experiment and clinical evidence. Stimulation of the vagus diminishes the heart's action, and gentle pressure has the same effect. Now, when the heart acts violently, the chorioid plexus, like other blood-vessels, will become distended with blood, and the finger-like cornu of the fourth ventricle, which contains the blood-vessel, will press upon the vagus, and thereby the action of the heart is moderated. This contrivance, which Dr. Moxon says is very inadequately described in systematic anatomical works, is therefore analogous to the ball-tap of a cistern, and automatically checks the too violent entry of blood into the brain. The second mechanism, whereby the too ready outflow of blood from sudden changes of posture is prevented, is to be found in the construction and arrangement of the veins and sinuses of the brain. The longitudinal sinus receives its veins in a direction opposite to its own current. The result of this junction of opposing streams is to neutralise the velocity of the outgoing blood, so that it is converted from a current to a mere overflow, while in case of a strong current of blood through the brain a weir or escapement is provided beyond the lock by means of the inferior longitudinal and straight sinuses for the blood from the inferior parts of the brain.

Dr. A. Holler's Method of Preparing Large Sections of Human Brains.—Dr. A. Holler, of Vienna, exhibited at the Congress a number of large sections of the brain capable of being examined by high power, prepared as follows:—The organ is hardened in

bichromate of potash, or Müller's fluid, without using alcohol. Sections of considerable thickness are then cut in the direction required by large microtomes. The sections are next thoroughly stained with carmine-ammonia, and then immersed in Canada balsam, and subsequently fixed on large plates of glass; when perfectly adherent, they are then reduced in thickness with ordinary knives, and further reduced by scraping with tenotomes; or the plane originated for this purpose, according to a different method, by Mr. W. H. O. Sankey, might be used. The sections thus thinned are then cleared with oil of cloves, and covered and sealed as usual.

M. Debove's Method of Preparing the Spinal Cord for Microscopic Sections.—Place the cord in a four per cent. solution of bichromate of ammonia for three weeks, then in a solution of phenic gum for three days, and for three days more in alcohol. Sections may then be cut with great facility. They should be placed in water to prevent curling. They are then immersed in a saturated solution of picric acid for twenty-four hours and coloured with carmine for about twenty minutes, the picric acid acting as a mordant.—(*Archives de Neurologie.*)

[*To be continued.*]

ST MARY'S HOSPITAL RADFORD LIBRARY MANCHESTER

INTRA-UTERINE TREATMENT OF PUERPERAL FEVER.

Breisky (*Zeitschrift*, 1881, I., p. 316) has treated fifteen cases of fever occurring in childbed from infection, with permanent irrigation, usually beginning with a lukewarm two or three per cent. solution of carbolic acid and gradually going down to ice-water. Only in a few cases was any internal medicament ordered. In those cases in which the fever had already advanced, permanent irrigation influenced the course only when the affection of the genital canal was slight, and only in so far as the affected parts came in contact with the stream. The diminution of the temperature is evident. In phlegmone, peritonitis, parenchymatous infiltration of the uterus and adnexa, and in deep-seated ulcerated ruptures, the employment of irrigation is of little avail. Still, Breisky considers it as an important factor with antipyretic remedies internally. Those cases last mentioned demand imperatively accurate examination per vaginam before any local measures can be introduced. Breisky does not advocate the active method of prophylactic disinfection of the genital canal as a general measure. His hospital for lying-in patients shows the following mortality:—Mortality from puerperal fever reached from 6·07 in 1879, to 0·02 now; total mortality, 0·83.—*Atalanta Medical Register*, Feb., 1882.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE COLLEGE OF PHYSICIANS.

SESSION 1881-82.

GEORGE JOHNSTON, M.D., President.
ALEXANDER NIXON MONTGOMERY, M.K.Q.C.P., Honorary Secretary.

Wednesday, April 5, 1882.

J. W. MOORE, M.D., Vice-President, in the Chair.

The late Sir E. B. Sinclair.

DR. FITZPATRICK said he rose for the purpose of moving a resolution which he was sure would be unanimously agreed to by the Society. It related to the death of Sir Edward Burrowes Sinclair, who had been for many years identified with the Medical Society, and who was formerly its Honorary Secretary. He (Dr. Fitzpatrick) had been acquainted with Sir Edward Sinclair for many years, and knew him to be a man of sterling character, honesty of principle, and straightforward in his views. If he was sometimes impulsive he was always true; and whenever he found he had made a mistake no man was more ready than he to make the *amende*. His reputation as a practitioner was well known in the city of Dublin, and there was no need to dilate upon it. A particular feature of his labours was his teaching of midwives for the army. He would move the following resolution:—

"RESOLVED.—That at this the first meeting of the Medical Society held since the lamented death of Sir Edward B. Sinclair, M.D., who filled the position of Honorary Secretary for two sessions, when this Society was known as the Association of Fellows and Licentiates of the College of Physicians, and who was afterwards appointed a Member of Council, all the time taking an active part in furthering its best interests, the Society desires to place on record the great loss which the medical pro-

fession in this city has sustained by his demise, and the members wish to convey to Lady Sinclair their heartfelt sympathy with her and the other members of his family in this their sad hour of trial."

Dr. Henry Kennedy seconded the resolution. He was a member of the Society at the time when the late Sir Edward Sinclair was its Honorary Secretary, and he performed the duties of the office exceedingly well.

The resolution was then passed in solemn silence.

Peculiar Form of Sensory Paralysis.

Dr. Walter Smith exhibited a patient who was suffering from a peculiar form of sensory paralysis. He came to the Dispensary of Sir Patrick Dun's Hospital complaining of numbness in his left side, and on examining him he (Dr. Smith) discovered some curious phenomena. The numbness or deadness of the left side, he said, came on without any cause about six months ago. He was employed in the Ringsend Bottle Works. There was no motor derangement whatever, but the sensory defect extended over a very large area of the left side. It was slightly marked in the face, and well marked from the ear to the neck, and over the whole of the left thorax and back down to the hip, beyond which it did not extend, sensation being normal in the thigh and leg. Localisation was good all over the area, the patient being able to localise any impression. He could also distinguish between a rough or blunt and a sharp point, but there was a remarkable insensibility to painful impressions. A handful of the small hairs of his neck could be plucked out without making him wince, and the skin of the affected area could be twisted until blood was nearly drawn without his feeling it. He was also unable to distinguish between cold and boiling water. The application of electricity produced contractions of the pectoral muscle, but even the Faradic wire-brush produced no sensation of pain. The moment, however, the middle line of the breastbone was passed sensations of pain were perceived. A nice question arose under these circumstances as to the nature of the mode of transmission of the sensations. The stimuli produced a greater reactionary flush on the affected side than on the other side. Reflex movements were unaffected, neither was there any impairment of sensation in the tongue. No observations had been made as to the comparative temperatures of the affected and unaffected sides. It was difficult to refer the affection to any central lesion on account of the area of the disturbance and the absence of all signs of derangement of the nervous system except those described. He (Dr. Smith) had seen cases of limited anæsthesia for which it was difficult to account, but he did not remember to have seen such extensive anæsthesia before.

Dr. Nixon said the case was of interest as affording evidence that there must be a special nerve tract for the transmission of painful impressions as distinct from ordinary tactile impressions.

Peritonitis caused by Caseous Mesenteric Glands.

Dr. Nixon.—This case is more interesting on account of the symptoms of the disease and the course it ran than in respect of its morbid anatomy, which is of a somewhat ordinary kind. A girl, aged thirteen, was admitted into one of the surgical wards of the Mater Misericordiæ Hospital, on the 12th of March, suffering from what was apparently a strumous ulcer, about the size of a crown piece, in the centre of the sternum. Some years previously she had a scrofulous enlargement of the glands of the neck, which suppurated and discharged for a considerable time; and then the ulcer formed in the sternum, for the treatment of which she presented herself. Mr. Hayes, the surgeon under whose care she was admitted, told me that she had no symptom of pulmonary or abdominal disease. After having been sixteen days in the surgical ward she complained, on Monday, the 27th ultimo, of headache. She also had vomiting of a severe character, and diarrhœa, and went to bed. On the following (Tuesday) morning her temperature was 104·4°, and her pulse was exceedingly rapid; on the evening of that day she was transferred to the fever ward. On Thursday morning I saw her, and her condition was then as follows:—She lay in bed on her side with her legs drawn up; she was stupid and drowsy, and apparently in a condition of collapse. She had a small thready pulse of 114 in the minute; her abdomen was tumid, and everywhere exceedingly tender; and she had a dry coated tongue. Her temperature was 101°. On examining the chest I found a distinct basic impulse over the pulmonary artery, which was so remarkable as to attract notice when the chest was exposed. I heard distinct crepitation under the left clavicle. She had vomiting of a very urgent character, the vomited matter being of a grass green colour; and she also had diarrhœa, the motions being sometimes passed involuntarily. It seemed to me that the attack was one of peritonitis, from the sudden way in which it arose; and I was inclined to think that there had been perforation of the intestine. As there were also physical signs of disease in the apex of the left lung, it seemed natural to conclude that some strumous or caseous ulceration in the glands of the intestines was going on, and that one of those ulcerations had reached the surface of the peritoneum and set up peritonitis. I treated the case as one of peritonitis, and gave her pretty large doses of opium and creasote to arrest the vomiting, and iced soda-water and brandy to meet her condition of collapse On the following Friday her condition was unaltered as regards temperature and collapse; but the diarrhœa and vomiting had

ceased, and she had no pain. That night at eleven o'clock I found her moaning, but unconscious, and on the following morning she died. A *post mortem* showed that there was general peritonitis. The intestines were all matted together; and there was a considerable quantity of thick purulent matter in the peritoneum which bathed the intestines. The liver still shows evidence of recent peritonitis. I carefully examined the intestines, but beyond what is a very usual condition—namely, localised patches of hyperæmia—I did not find any alteration. The patches of Peyer were unusually well marked, and towards the ileocæcal valve some of them presented the appearance known as the "shaven beard," but I found no ulceration in the intestines. The mesentery is enormously thickened; and in the thickened portion of the peritoneum there are greatly enlarged mesenteric glands, some of which have undergone caseation, and some even calcification. One of these glands had at one point apparently ulcerated through the peritoneum. I think the enlargement of the glands of the mesentery and their subsequent caseation resulted in the extension of inflammation to the peritoneum, where it set up the general peritonitis of which the patient died. On examining the thoracic organs the left lung was found to present a very good example of fibroid phthisis or cirrhosis of the lung. The lung is considerably reduced in size; and a through section of it discloses an enormous development of fibroid tissue with very well marked bronchiectasis. With regard to the right side of the heart the ventricle is not dilated, nor are its walls hypertrophied. I should have mentioned that there was a considerable amount of hyperæmia of the interior of the right lung. The points of interest in the case are the latency of the lung disease and of the abdominal disease having regard to the conditions met with after death. There was a striking analogy between this case and one I saw some months ago in the hospital, of a man who was admitted for a cough, and had no very severe symptoms during a portion of the time that he was in the hospital. Suddenly he complained of extreme dyspnœa, and on examining him evidences were found of very extensive pneumothorax. This condition was so extreme that I thought it advisable to let out the air in order to relieve him. However, he died; and on a *post mortem* we found a very small caseous nodule—in fact, it was a case of lobular pneumonia, limited to an area not larger than a small marble. This lay underneath the pleura, which softened and gave way; and a communication was thus established between the cavity of the pleura and the external air. I think it was exactly in that way that the peritonitis was brought about in the present case. We had the caseous mesenteric gland approaching the surface, probably rupturing the peritoneum, and then setting up a fatal peritonitis. On the day before the patient complained of shivering, headache, vomiting, and diarrhœa; she had been out in the garden playing about, and had taken her meals as

usual. With the exception of the ulcer, which was in the front of her sternum, she was apparently in perfect health.

Dr. Walter Smith said that Dr. Nixon's theory of the peritonitis having been caused by perforation produced by an eroding caseous mesenteric gland found an analogy in what sometimes, although rarely, took place in the chest when there was an erosion of the bronchus by a caseous tracheal gland. He had seen a case of gangrene of the lung caused by the sucking in of a portion of the rotten gland through an ulcerated bronchus. Dr. Gee some years ago recorded a series of such cases in the "St. Bartholomew's Hospital Reports."

Dr. Nixon said the girl got ill on a Monday and was dead on the following Saturday. He considered that the occurrence of pus as the result of peritonitis was generally the result of the extrusion of foreign matter into the peritoneum. If in a case of typhoid fever with peritonitis it was found after death that there was simply a lymphy exudation into the peritoneum the inference would be that the peritonitis had arisen from an extension of inflammation from contiguity without perforation. But if a quantity of purulent matter was found in the peritoneum perforation had occurred, and the matter found in the peritoneum was foreign, having passed into the cavity from the intestinal tube, so causing peritonitis.

Acute Diphtheritic Endocarditis in Chronic Valvular Disease.

Dr. Nixon said: The specimen which I now exhibit was taken from a patient who had very well marked aortic patency with mitral regurgitation. The points of interest in the case are three. First, the extreme amount of disease involving the segments of the aortic valves. This was probably a case in which acute diphtheritic endocarditis supervened on a chronic valvular lesion. It is by no means uncommon in chronic valvular disease of the heart to find the sudden accession of severe symptoms, including great dyspnœa, dropsy, and pain, and then for the patient to die in a few days after the distressing symptoms had manifested themselves. The explanation of many of such cases is that acute diphtheritic endocarditis supervened on chronic valvular disease. Another point of interest is that the mode of extension of valvulitis from the posterior segment of the aortic valve to the anterior flap of the mitral valve by contiguity is well shown. Again, the specimen presents a good example of acute aneurism of the mitral valve. An aneurism of small size projects into the auricle. The kidneys present a good example of the amyloid form of Bright's disease, and the spleen presents a condition with which I am not familiar, but I think it corresponds to what is known as the sago spleen, which is a condition of amyloid disease in which the amyloid matter is deposited in little round nodules, like miliary tuberculosis of the spleen.

A Skeleton Respirator for Antiseptic Inhalation.

Dr. E. M. Cosgrave said that this was a respirator to be used in the inhaling of antiseptic solutions. It had certain advantages over other respirators. That designed by Dr. Coghill required that the patient should be taught to inspire through the mouth and expire through the nose, which was often very difficult to do. Dr. Williams' respirator, which covered both mouth and nose, presented some manifest disadvantages. The respirator which he (Dr. Cosgrave) now submitted simply consisted of a light cage, the four sides of which were completely open, so that the air could pass through them. There was a grating in front for holding the piece of lint, which was to be saturated with the antiseptic solution. In the first place this respirator prevented the breathing again of foul air. The expired air was diffused from the vicinity of the mouth, and fresh air was drawn in, which was a great advantage in cases in which the lungs were much affected. Again, it did not heat the air in the way in which Coghill's respirator did, nor did it cause any oppression of breathing. It could be used in cases in which Coghill's respirator could not, because the latter interfered with the breathing, especially in cases of young persons who had serious lung disease, and who had a nervous dread of anything interfering with their respiration. It allowed the patient to speak without its being removed, it was very light, and the lint had not to be recharged nearly so often as with the other respirarators. It was being used at present by several physicians in England; and he had notes of cases in which it had been used with success, especially by Dr. Mackey of Brighton.

The Vice-President said he was not prepared to admit that the non-heating of the air by the respirator was an unqualified advantage. Another objection was, that in consequence of the sides being unprotected very little of the air which was impregnated with the antiseptic solution would enter the mouth.

Dr. Tweedy thought the respirator offered too large an evaporating surface to the antiseptic fluid. The air from the sides would prevent a great deal of the antiseptic vapour from getting into the lungs at all. In Steevens' Hospital the respirator used was Roberts's, which was enclosed at the sides.

Dr. Duffey said this apparatus was more an inhaler than a respirator, and, as such, some of Dr. Cosgrave's arguments in its favour were really objections to it. In antiseptic inhalation it was an object to obtain inspiration through the mouth and expiration through the nose, which was a thing that this inhaler did not accomplish. In all cases of consumption occurring in the hospital with which he (Dr. Duffey) was connected he used Roberts's inhaler, the great advantage of which was that it covered the mouth. More recently he had used an inhaler

by Dr. Saundby, one of the advantages claimed for which was that the patient could breathe through both mouth and nose, and at the same time expire without difficulty. He had never heard it complained of as heating the air or causing any oppression of breathing. It also permitted the patient to speak. It was very light, did not require to be often renewed, and was very cheap, costing about 4s. 6d. The substance he used for saturating with the antiseptic fluid was tow or flax, and he found about ten drops of oil of eucalyptus to be sufficient. The great disadvantage of Dr. Cosgrave's instrument was that the atmosphere was not rendered entirely antiseptic by it.

Dr. Walter Smith said he had grave doubts about the advantage of any of those instruments. Some of them contravened the provision of nature that the nose should be the avenue of respiration; it was anatomically fitted to do two things which respiration did not do—namely, to warm the air and render it moist. He thought the principle of all these instruments was radically wrong, and that they should be discontinued. In a few cases they might be useful.

Dr. Doyle said he had used Roberts's respirator in cases which would not tolerate any other. He found it most useful in the case of a gentleman who was obliged to sit in a small office in which the air was bad in consequence of smoke.

The Vice-President said an interesting paper was read last year before the Society by the late Dr. Hayden, in which he discountenanced the use of respirators altogether, and proved conclusively that anatomy was altogether in favour of breathing through the nostrils. Infants always breathed in this—the natural way.

Dr. Cosgrave, in reply, said he should more properly have called the instrument which he had submitted an inhaler. No doubt it was sometimes an advantage that a respirator should heat the inspired air, but there were other cases in which it was desirable to apply antiseptic vapour to the lungs without heating the air; where it was desirable to heat the air he thought Coghill's respirator the best. He considered carbolic acid quite a sufficiently strong antiseptic. Lint dropped in a solution of the acid, in the proportion of 1 to 30, was so strong that the patient sometimes found it impossible to continue breathing it. No doubt breathing through the nostrils was the normal process, but people sometimes did not do it, and when they were suffering from some affection of the chest it was no time to teach them to do so. They would then require some kind of antiseptic respirator in front of the nose and mouth.

The Society then adjourned.

PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

FORTY-FOURTH ANNUAL SESSION.

John A. Byrne, M.B., President.
William Roe, M.D., Honorary Secretary.

Saturday, March 4, 1882.

Dr. J. A. Byrne, President, in the Chair.

Uterine Polypus.

Dr. Atthill exhibited a tumour removed from a patient in the Rotunda Hospital a week previously. She had been sent to him by Dr. Wallace, of Parsonstown, as a case of uterine polypus which had passed into the vagina. On examining her, he found that diagnosis correct. She never had been pregnant, and the vagina, which was narrow, was completely filled up by the tumour, so that the os uteri could not be reached. The tumour was drawn down by means of a vulsellum, and the wire of an ecraseur passed round the pedicle, which was of moderate thickness. This was severed without difficulty, but a forceps had to be employed to extract the tumour from the vagina. Profuse hæmorrhage now occurred—indeed he had seldom seen a case of *post partum* hæmorrhage in which it was so profuse. This was most unusual, for it was in accordance with experience that hæmorrhage seldom followed the removal of pedunculated tumours when they had passed into the vagina. On making a careful examination after the removal of the tumour, he found that the cervix uteri, which was exceedingly thin, had been stretched over the tumour, which had not passed completely out of the uterus; and he could see distinctly that the bleeding proceeded from several small vessels which had been severed by the ecraseur. Syringing with hot water failing to check the bleeding, he filled the whole uterus with pledgets of cotton saturated with a solution of the perchloride of iron. After this there was no further hæmorrhage. The patient was now convalescent. On examining the tumour, it proved to be a fibroid which had been partly enucleated. The whole tumour had been removed, the capsule not having been divided. The tumour had been attached to the uterus by the muscular tissue of the uterus which formed the pedicle, and in which had been situated the vessels from which the hæmorrhage proceeded.

The PRESIDENT said the case was interesting as indicating the great power of expelling tumours spontaneously which was possessed by the uterus.

Uterine Tumour.

DR. HORNE exhibited another form of uterine tumour. On March 3rd a woman, aged thirty-four, of fair complexion, was admitted into the Rotunda Hospital on account of profuse hæmorrhage. She gave the following history :—She had seven children, and one abortion. Her last child was born three years ago. She nursed it for fourteen months. The catamenia then appeared. Menstruation continued regular, but the amount scanty, until the 23rd of last August, when it ceased. She believed she was about six months pregnant, but never felt any fœtal movements. Three days previous to admission, while washing, she felt a slight discharge of blood. She remained at rest during the day and it ceased, but returned two days subsequently. On admission she was very pale and anæmic. The vagina was filled with large blood clots. The os uteri was about the size of a shilling, but no membranes were found protruding. The uterus reached a little above the pubis. When a few hours in hospital, severe pains came on. The os was now dilated to the size of a half-crown, and through it could be felt a mass, which felt very like a placenta. The hæmorrhage becoming profuse, he injected hot water (temp. 105° F.) into the uterus, the immediate result of which was the expulsion of the mass which he now exhibited to the Society. Not yet having carefully examined it, the only idea it gave, to his mind, was that it was a case where the ovum had been blighted, and the decidua had undergone fatty degeneration.

DR. MACAN said there seemed to be regular organised tissue in the specimen, and some degeneration of the placenta. The curious feature was the small size of the ovum, assuming that there had been a six months' pregnancy.

The PRESIDENT remarked that the specimen was one rather calling for pathological investigation. It had, to a great extent, the appearance of a degenerated placenta, but presented no apperance of vesicles. It was curious that it should have remained in the uterus so long.

DR. NEVILLE said, from looking at the specimen, he believed that if it were placed in a bowl of water chorionic villi would be easily seen traversing its substance. He could even now see some vesicles very distinctly. He thought the case was one of the vesicular myxomatous degeneration of the chorion. If dissected carefully the vesicular enlargements of the villi would be better seen. It must have been retained in the uterus for a considerable time, its size being quite inconsistent with a six months' pregnancy. He had made it a practice to examine aborted ova, and he had frequently seen commencing nodular enlargement in

very young villi. He, therefore, thought the present was a case of commencing myxomatous degeneration, specially interesting because of the completeness with which the ovum had been expelled.

The PRESIDENT.—In that case you think the degeneration commenced in the interior. As far as I can understand from you the villi in the interior are degenerated. I think the specimen one worth examining very closely.

DR. KIDD said it would be well to refer the specimen to a sub-committee. His impression was exactly that expressed by Dr. Neville—namely, that the case was one of commencing hydatiform disease. He had examined a portion of the specimen, and thought he could detect vesicular formations in it. It would be well to have a report on the microscopic structure of the formation.

DR. ATTHILL.—If Dr. Neville will make an appointment with Dr. Horne to come to the Rotunda any day for the purpose of having an examination of the specimen, we shall be very happy to give them assistance.

Dr. Horne and Dr. Neville were appointed a committee to examine the specimen and report to the next meeting of the Society.

Accidental Concealed Hæmorrhage. By ANDREW J. HORNE, M.K.Q.C.P., L.R.C.S.I.; Assistant Physician, Rotunda Hospital, Dublin.

HÆMORRHAGE occurring in the latter months of pregnancy, whether it be accidental or unavoidable, is not of very infrequent occurrence, as numerous examples are to be found in the records of every maternity, but that form which is described under the name of Accidental Concealed Hæmorrhage is fortunately very rarely met with. The difficulty of diagnosis, and the often fatal result which ensues, caused me to think that the following case which I am about to describe may prove of interest to the members of this Society, and, at the same time, may elicit opinions as to the mode of treatment to be pursued in such cases.

CASE.—Mrs. B., aged thirty-four, always healthy, pregnant with her seventh child. All her previous labours had been natural and easy. Between the fourth and fifth she had an abortion at third month of pregnancy.

On November 11th she became a patient of the extern maternity of the Rotunda Lying-in Hospital. She was visited at 9 a.m. by Mr. Chapple, one of our intern pupils (to whom I am greatly indebted for the notes of this case). She was then very pale and weak, with a quick, small pulse, and moist skin, disinclined to speak or move, and complained of pain in the back extending down both groins. At this time it was impossible to learn anything definite from her, further than that she had been in excellent health, far better than in her former pregnancies. She had been out of the house the previous evening following her usual occupation, buying furniture, some heavy piece of which she lifted. During the night she awoke, feeling weak, and with pain in her back.

She quickened at four and a half months, and felt the child quite strong the previous day.

On examination the os was felt high up; the cervix soft. The external os was patulous, admitting the point of index finger, but the internal os was closed. No presentation could be felt. At 4 p.m. there was a slight oozing of bloody serum, soon after which I saw her. On making a vaginal examination I could detect no presentation, but the anterior *cul-de-sac* was filled with a soft tumour. The internal os was slightly open, but no membranes could be felt. I decided, if possible, to rupture the membranes as a preventive of hæmorrhage. I accordingly passed a stillete of an ordinary gum elastic catheter into the uterus, but did not succeed in evacuating any liquor amnii. I then passed a sound, and found that it penetrated to the depth of nine inches. Although moving it about freely I could neither rupture any membranes nor feel any part of a fœtus. I then made a careful external examination with the woman lying flat on her back. I was first greatly struck by the rotund shape of the uterus, which was lying almost entirely on the right side of the abdomen, the left flank within two inches of the umbilicus being quite resonant. The tumour was very tense, as if in tonic contraction, but in no part was bulging to be observed. The woman complained of pain when the left superior margin of the uterus was touched. By palpation no fœtal parts could be felt; nor with the stethoscope was any sound audible. Being greatly perplexed I returned to the hospital, and related the case to the Master, Dr. Atthill, and he kindly came and saw the case with me. The treatment we decided on adopting was first to plug the vagina with cotton wool rendered antiseptic with carbolised vaselin; liquid extract of ergot internally; beef tea and milk diet.

Nov. 12, at 11 a.m.—Patient felt much better; the pulse was 110; could turn in the bed. I removed the plug—a small quantity of bloody serum followed. The os was quite closed.

Nov. 13, at 8 p.m.—A messenger came to the hospital saying the patient felt pain. Found her in much the same state as on first visit; pulse very rapid, but in less pain. She vomited occasionally, and complained of having suffered from "dry retching" throughout the day. On examination the fœtal head was detected; the membranes unruptured, and no further hæmorrhage. After an interval of forty-five minutes the membranes ruptured, and five or six ounces of liquor amnii escaped. Her pains were so slight that patient remained almost motionless, and scarcely uttered a sound. In less than twenty minutes from the time of rupture of the membranes, she suddenly remarked that she thought "she had a pain," and a dead female child of full size was born with the placenta attached. The uterus still felt large and above the umbilicus. Slight pressure in the fundus expelled a large blood clot measuring from 5 to 6 inches in diameter and from $1\frac{1}{2}$ to 2 inches thick.

Such, then, are the principal features of the case, and it is quite unnecessary for me to enter into the subsequent treatment. Suffice it to say that she made a slow but good recovery. I visited the patient to-day and found her in excellent health.

Being greatly perplexed over the case, I first naturally turned to our ordinary English textbooks for information, but was disappointed to find hardly any mention of the subject in them. On referring to *The Obstetrical Journal* I find that to Dr. Braxton Hicks is due the credit of having first brought the subject forward, in a paper he read before the London Obstetrical Society in the year 1860. He collected 23 cases from various sources, only one having occurred in his own practice. In 1875 Dr. Burton again brought the subject before the Medical Society of London—five cases he met with himself, and he reported five others occurring in the practice of different practitioners. Since 1875 I find there have been four more cases recorded—one by Dr. Weatherby, which was read at the meeting of the British Medical Association held at Bath in 1878; one by Dr. Maberly, reported in *The Obstetrical Journal of Great Britain*, 1877; and two cases by Dr. Edgar Barnes in *The Lancet* of last December. So altogether, including the case I have just read, we have a total of 37. Of these, 23 mothers died, while only 14 recovered. In every case the child was stillborn. In the last German edition of Spiegelberg's work, of 110 cases collected by Goodell and Hennig, 56 died, and only 7 children were saved.

The symptoms of all the cases are very similar. They may be conveniently classified under two heads—general and local. To the former belong the sudden fainting or feeling of weakness attended with anæmia—in fact, all the symptoms of hæmorrhage without any external discharge of blood; the complete absence of true labour pain. To the latter, the continuous stretching pain felt over the abdomen; the pain on pressure over any portion of the tense uterus, and the continuous tense feeling of the membranes.

The diagnosis has generally to be made between rupture of the uterus or rupture of any of the abdominal viscera in a pregnant woman, or possibly from simple fainting in an anæmic patient. In the case I have just read, the first difficulty we had to meet was to find out whether the woman was really pregnant or not, as neither by internal nor by external manipulation could any fœtal parts be detected. This was undoubtedly due to the large amount of blood effused, together with the extreme tension of the uterine fibres. The bulging in the anterior *cul-de-sac* may have been due to the placenta being attached low down in the uterus.

The most important question that arises is as regards the treatment of these cases. Are we to treat them as we would an ordinary case of accidental hæmorrhage—to rupture the membranes as soon as possible, and should this fail to check the hæmorrhage, to proceed to delivery by

turning, or forceps, or otherwise as circumstances may advise? or are we to procrastinate and endeavour to husband the strength of the woman by stimulants and nutriment in the hopes that the coagulated blood in utero may prevent any further hæmorrhage, as we should remember the uterus in these cases is in a state generally of tonic contraction, owing to the great distension. Again, we must not overlook the fact that nearly in the whole of the cases that died the membranes had been ruptured.

The PRESIDENT.—Everything on the subject of hæmorrhage is of importance. I have never myself seen a case similar to this; and the small number that have been recorded prove that the accident is not frequent. I remember seeing the late Dr. Sawyer exhibit in this room a case in which utero-placental hæmorrhage occurred, and a cyst was formed between the uterus and the placenta. I think the case ended fatally. Dr. M'Clintock, in his work on Midwifery, records a case which occurred in the practice of the late Dr. C. Johnson, in which rapid and urgent symptoms set in and the woman died, and afterwards this condition was discovered. In both cases the symptoms were very rapid and urgent, and there was great collapse; and in both it was only the result of the *post mortem* examination that revealed the source of the hæmorrhage.

DR. KIDD.—This case is one of extreme importance. Some years ago I was sent for by Dr. Hadden and Dr. Harley to see a lady in Rathmines, in whom they had very correctly diagnosed concealed hæmorrhage. The lady was between eight and nine months pregnant. She had fallen a few steps down stairs the evening before, and experienced great pain afterwards. In a short time symptoms of collapse set in, and Dr. Hadden, whose relative she was, saw her. The nature of the case was not at first very evident. The symptoms were those of collapse, but what the collapse resulted from was not apparent. She was placed in a recumbent posture, her head was lowered, and stimulants and nourishment were given, and under the influence of that treatment the symptoms of collapse passed off, and for some two or three hours she appeared as if about to recover. Then, however, the reaction that had set in gave place to further prostration; and now the uterus was found to be larger than before, and doughy in its feel, and the collapse was very profound. It was then that I saw her. She had got stimulants freely, which was followed by a partial reaction. The question arose—what treatment should we adopt? On examination of the os it was found to be quite closed, and there was not the least appearance of hæmorrhage, but the enlarged and doughy uterus and general condition indicated that hæmorrhage was going on internally. After some consideration we determined to try to induce labour; and we succeeded in introducing Barnes's bags into the os, and delivered the woman in that way. The dilatation of the uterus occupied from half to three quarters of an hour,

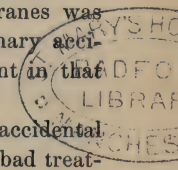
and it was accomplished so far as to enable us to reach the presenting part, which proved to be the breech. With a considerable amount of trouble and difficulty we delivered the woman, and immediately afterwards a large mass of coagulated blood was expelled. So far the case seemed promising enough, but, unfortunately, hæmorrhage continued, and we were quite unable to stop it. We injected the uterus, and I passed my hand into it in order to try to stimulate it to contract. We injected perchloride of iron, but in vain. I then introduced a piece of solid perchloride of iron, but it proved of no avail; the hæmorrhage still continued, and the lady died while we were in the house. My reflections on the case lead me to say that the more promptly the woman is delivered in such a case the better. Of course when the collapse and prostration are extreme one can hardly venture to deliver; but if there be any attempt at reaction at all in the pulse the safest and best practice is to dilate the os uteri as quickly as possible. I prefer that mode of treatment to rupturing the membranes, which is a very slow way of inducing labour. You would have as the result of that procedure a certain amount of contraction produced by the escape of the waters, but not enough to check the bleeding, and I certainly think that if I were to meet a case of the same kind again I would pursue the same practice—namely, rupture the membranes in the first instance and then dilate the uterus as rapidly as possible, and complete delivery. A few days ago Dr. Denham told me of a case which Dr. Johnson was in the habit of relating, and as Dr. Denham is present I hope he will give us the details of it, as illustrating the diagnosis of such cases, which is the real difficulty. In Dr. Horne's case the symptoms were not very marked and the hæmorrhage was not great, and very active treatment was not demanded, but in grave cases of concealed hæmorrhage delivery should be accomplished as quickly as possible.

Dr. Denham.—The subject is one of deep interest. First, as to diagnosis. I remember Dr. Johnson relating the case of a lady between eight and nine months gone in pregnancy who was suddenly seized with weakness and fainting. In her previous labours she had been subject to hæmorrhage, and she was familiar with the symptoms accompanying loss of blood. When Dr. Johnson saw her he could see no appearance of bleeding, but she exclaimed that she was flooding to death, and continued to express herself in that way until she actually died, although apparently she had not lost a single drop of blood. On examination after death it was discovered that the circumference of the placenta had adhered to the uterus, but that the central part of it had separated, and there was a large coagulum of blood which had welled out, and the amount of hæmorrhage was so great as to have caused death. I believe these cases of concealed hæmorrhage are more frequent than we are aware of. If we diagnose hæmorrhage we should follow Dr. Kidd's plan of inducing labour as

speedily as possible. I would not hesitate in such a case to rupture the membranes, and then induce labour. I think our own fingers are more efficient than Barnes's bags. A careful and practised hand can dilate the os more safely and rapidly than by any mechanical manipulation. Not more than a week ago I saw, in consultation with Dr. Kidd, a very interesting case—viz., that of a lady eight months gone in pregnancy. When I saw her she was in collapse. I got her into bed, and succeeded in rupturing the membranes; a great quantity of blood in the meantime had escaped. The amount of liquor amnii was very considerable, and I hoped that by getting that away I should be able to command the hæmorrhage. She rallied a good deal, but still there was a good deal of collapse, and I did not think it safe to leave her in that condition any longer, and accordingly sent for Dr. Kidd. At that time the head had not come down. After his arrival we found that the head had come down, and we applied the forceps and delivered her of a stillborn child, and I am happy to say that she has been going on most favourably since. She has entirely rallied, and has no bad symptoms, and we have every hope of her recovery.

Dr. Atthill.—Cases of concealed hæmorrhage are either so rare or so little understood that they are actually not mentioned in the text-books; yet Dr. Horne has shown us that fully 60 per cent. of these cases prove fatal. The case he has laid before us to-night is to me both interesting and instructive. Since I became Master of the Rotunda Hospital we must have had some 14,000 deliveries, either in the hospital or in the extern maternity, and as this is the first of the kind I am aware of having occurred, they must, therefore, be comparatively rare. Dr. Horne feeling himself perplexed as to the exact nature of the case, I visited the patient with him, and I felt much difficulty in arriving at a correct diagnosis. The first question was—Is it a case of pregnancy at all? We had only the woman's word that it was so, but you cannot always rely on what is said by women in her class of life, and I had some doubts on the subject, for, on passing my hand over her abdomen, nothing like a fœtus could be felt, while the abdomen was so wonderfully tense that I could hardly conceive that the uterus could be distended to such an extent from hæmorrhage without its endangering life. I never felt an ovarian tumour which caused more tenseness. The pulse was small and shabby, and the patient complained of great distress, but she was not sinking, and her condition evidently rather improved within the last few hours. Under the circumstances I considered it best to temporise, and therefore advised Dr. Horne to plug the vagina and put the patient on ergot. By and by the pains came on, and afterwards a safe delivery of the woman took place. We find that out of 23 cases of this sort there had been 14 deaths, and that in all the cases in which the membranes were ruptured the patients died. That looks very like cause

and effect. If the placenta has been separated from the uterus by a sudden shock, and if the uterus is stretched by effusion of blood and we empty it very rapidly, are we not putting the patient into a condition much more likely to be followed by further hæmorrhage than if we wait till uterine action sets in? Nothing is more likely to induce *post partum* hæmorrhage than the too rapid emptying of an over-distended uterus. We know that twin births are more likely than single ones to be followed by hæmorrhage, partly owing to the large placental site, but more specially because the uterus is over-distended. Therefore, in such cases, I advocate, before attempting to accelerate the birth of the second child, that we endeavour to excite uterine action. I am also against the too rapid expulsion of the placenta—the principle is the same under all these circumstances. Even Dr. Kidd's case, though treated so skilfully so far as the dilatation of the os uteri and the effecting delivery is concerned, can hardly be called successful, for the patient died. I think it possible that the discussion may rather tend against the treatment of these cases by rapid delivery. In the present instance, before I saw the patient, Dr. Horne attempted to rupture the membranes. I think this should not be attempted till you first set up uterine action; and the statistics accumulated by Dr. Horne are against the practice. Dr. Denham's case is not exactly an analogous one. In his case rupture of the membranes was followed by very satisfactory results, but it was a case of ordinary accidental, not concealed, hæmorrhage; and therefore his treatment in that case does not bear on the subject under consideration.



Dr. Macan.—The case before us is practically one of accidental hæmorrhage. On the Continent it has been long held to be bad treatment to rupture the membranes in cases of accidental hæmorrhage before uterine action has set in. The mechanical reason for this is obvious. If the hæmorrhage takes place when the uterus is not acting, the only effect of rupturing the membranes is to lessen the amount of intra-uterine tension; but if the hæmorrhage be external, we at once increase the amount of intra-uterine tension by plugging the vagina, or, perhaps better, the cervix uteri, and the increase in the intra-uterine tension tends of course to lessen or arrest the hæmorrhage. As regards diagnosis, I did not hear pain mentioned as one of the symptoms. The only case of concealed accidental hæmorrhage that I have had an opportunity of observing was in the first case to which I was called out in consultation from the Rotunda Hospital. The woman had been for some time in labour, and when I arrived I found her in a state of collapse, labour pains having quite ceased. There was hardly a trace of blood externally, but when I lifted up the head of the child from the brim of the pelvis I could feel the blood coming down through my fingers, and it was obvious that the case was one of internal hæmorrhage, the bleeding having been concealed by the close way in which the head fitted the cervix. I think that in

cases of concealed hæmorrhage the amount of collapse is much greater than would be produced merely by the amount of blood lost, and is partly due to shock. With regard to the treatment of the case submitted to us, I think that rupture of the membranes should be practised only if the uterus be contracting. The only way we have of increasing intra-uterine tension is by plugging the cervix. This also brings on labour, which is the one thing necessary; while the forcible emptying of the uterus when there is no uterine action is very likely to be followed by *post partum* hæmorrhage. It is not always possible at once to introduce Barnes's bags in such cases. In fact, Dr. Barnes, when he wants to bring on premature labour, generally introduces some sea-tangle tent the day before, and the following day applies the bags. I should recommend Hegar's dilators for the purpose of enlarging the os to a sufficient size to enable us at once to introduce the bags. I do not think that in any of these cases of concealed hæmorrhage you have proper uterine action, and when it occurs there must be something radically wrong with the muscular tissue of the uterus itself.

Dr. Doyle.—As to the practice of rupturing the membranes in accidental hæmorrhage, I was never called to see a case requiring it, but I have been taught that it is a proper practice. From the observations I have heard to-night, however, I should think that a great deal would depend on whether you were dealing with a primipara, or a woman who had borne some children. In the latter case the effect of hæmorrhage, which went on increasing, would be to produce something like what occurs when an over-distended heart, which is at the same time in a condition of muscular degeneration, collapses. I do not see why the same result should not ensue if the walls of the uterus are thin and degenerated, and if there be over-distension. The effect of the over-distension would be not to increase the pains, but to paralyse the muscular fibres; and in such a case rupturing the membranes would be proper treatment. But in the case of a primipara, where you have a good strong uterus, it would be better to wait and let the uterine pains set in. Another advisable form of treatment, I think, is the injection of some saline infusion, but I am not in favour of transfusion.

Dr. Dill.—I have long entertained the idea that this subject of accidental hæmorrhage is one of a very peculiar character. I have an impression that the collapse, or death that occurs, is not exactly owing to the amount of hæmorrhage. I cannot imagine in the case under discussion, in which the hæmorrhage existed between the placenta and the uterus, that the circumference of the former, attached to so small a space, should contain such a quantity of blood as would carry the patient off. We know that in almost all cases of labour we meet with more hæmorrhage than could possibly be retained in a space of that kind, and yet we have neither fainting, nor collapse, nor any other fatal symptom.

The collapse, or death, results more from the shock to the system than from the loss of blood. I believe that in a patient who is nervous, or already anæmic, the tearing, or other injury, of the parts is quite enough to induce collapse apart from any hæmorrhage. My experience has been limited to two cases; but in these there were local pain and collapse, quite sufficient to enable me to diagnose hæmorrhage. I treated these cases more according to an expectant plan—if you will allow me to use the word—than by any forcing measures, for I hold that it is better to sustain and encourage the patient so as, if possible, to allow nature to bring about labour, than to resort to any tampering or interference. I believe that expanding the os, or introducing any instrument for the purpose of performing even the mildest operation of that sort, is only adding to the shock. I believe it is in those cases that are tampered with that death occurs. My two cases terminated favourably.

Dr. Cranny.—It is very important in such cases to get up uterine action. I fully agree with the gentlemen who have said that it is better not to rupture the membranes. It stands to reason that, when the uterus is not acting, if you relieve the tension you will create more space for blood to accumulate in.

Dr. Macan.—I have been misunderstood again. I was speaking of the ordinary treatment of accidental hæmorrhage when I referred to plugging the vagina. I did not mean to say that it is the best treatment of concealed hæmorrhage. I recommended the use of Hegar's dilators in such a case. I was glad to hear to-night, for the first time, that rupturing the membranes in ordinary accidental hæmorrhage is bad treatment, and that it is much better to plug.

Dr. Kidd.—Before the discussion closes I beg to be allowed to make some further remarks, as those who have spoken have dealt with the case I related and the treatment of it, as well as with the original paper. Two methods of treatment have been discussed—the expectant, as in Dr. Horne's and Dr. Dill's cases, and the active, as in mine. The expectant plan may, no doubt, answer very well where the hæmorrhage is not great, the symptoms are not very marked, and the diagnosis is not very clear; but where hæmorrhage is going on freely, and the patient becoming more and more prostrate, he would be a brave man, indeed, who could stand by with folded hands waiting for the current to stop. One of the speakers has very aptly compared such conduct to that of the clown who sat by the river's edge waiting till the water had all flowed past that he might cross over. I am sure the most earnest advocate of expectant or do-nothing treatment would adopt the active plan when he saw the patient sinking—sinking—sinking from the continued loss of blood—and would without hesitation try to check the bleeding. The question is as to how this can best be done. Some have spoken of rupturing the membranes, and some of plugging the vagina, either after rupturing the membranes or without

doing so; but rupturing the membranes is a very slow way of inducing labour. We all know that labour may not come on for several days after the membranes have been ruptured, and the immediate contraction induced may be quite insufficient to check the bleeding, in which case, as Dr. Macan has pointed out, it may even increase it by lessening the uterine tension. Rupturing the membranes then is certainly not to be relied on. As to plugging the vagina, unless it is done with a view to inducing uterine contraction, seeing that no blood is escaping from the uterus, it is difficult to understand why it should be thought of. As to inducing labour or hastening it, who ever knew of its doing so? Even in a case of placenta prævia, where the flow of blood from the uterus may be checked by plugging, it is, in my mind, a most dangerous mode of treatment. I maintain that the only mode of treatment that affords a chance of saving the patient in a serious case of concealed hæmorrhage is the prompt evacuation of the uterine contents. Dr. Macan, I am glad to find, agrees with me in this. He, however, would begin the process with Hegar's dilators; I prefer Barnes's bags—I believe them to be safer, more prompt and efficient. If the os be so small that the small-sized bag cannot be introduced, let Hegar's dilators be used in the first instance, if they are at hand, or, better still, let the finger be pushed into the os, and then the bag if necessary; but if dilatation can be effected by pushing in the fingers one after another, as Dr. Denham has suggested, it is the best method of all, and where much hæmorrhage has been going on, and the woman has previously had children, it may be done without difficulty. It has this advantage—there is no time spent in looking for the instruments. Whatever plan be adopted, as soon as the hand can be got into the uterus, the child should be turned, if necessary, and extracted; and I believe it is better to introduce the hand than to attempt bipolar version as being the quicker and more efficient method. But it has been objected to this practice that my patient died, and that a large proportion of the cases collected by Dr. Goodell died. In Dr. Goodell's cases, the treatment was the rupturing of the membranes—a method too slow and uncertain to save the patient. In my case, the patient died from hæmorrhage after delivery, and some of the speakers have attributed this to paralysis of the uterine fibres caused by over distension. I very much doubt the correctness of the explanation; but if it be correct it affords another reason for prompt delivery, and not allowing the distension to proceed. As Dr. Doyle has said, no one would treat an over-distended right heart by means calculated to increase the distension, nor would anyone, I presume, treat a paralysed bladder by allowing the urine to go on accumulating in it. I believe the true explanation of the *post partum* hæmorrhage was, that some large uterine sinus had been injured, and that the patient had been greatly exhausted before the operation.

Dr. Atthill.—Allow me to explain. I spoke of a particular case, and

not of accidental hæmorrhage in the general acceptation of the term; I decided to wait in that case, because there was no urgent symptom, the woman's condition was improving, and chiefly because there was no attempt at uterine action, and I have no hesitation in saying that I treated her rightly. I further said that, reasoning from the statistics quoted by Dr. Horne, I thought the question of treatment was an open one—that it would, perhaps, be unwise to make it a rule always to rupture the membranes. In every case recorded of rupturing the membranes the woman died. Where you have no uterine action whatever rupturing the membranes, under any circumstances, is bad practice. Dr. Kidd has said that plugging the vagina in unavoidable hæmorrhage is, to use Simpson's expression, fool's practice. I quite agree with him.

Dr. Dill.—As I said something which elicited a strong statement from my friend Dr. Kidd, he will allow me to say that, from his standpoint, his line of action is perfectly correct and logical, while from my standpoint my statement is equally correct and logical. My position is that I did not assume the truth of the illustration that the river was flowing past at all. I said that in these cases death arises rather from the shock than the hæmorrhage, and that if the practitioner adopts a treatment which will add to the shock he does what will tend to produce further collapse and possibly death. From that point of view I think Dr. Kidd will admit that my "expectant" line of sustaining the patient, and taking advantage of every circumstance that presents itself, is consistent with my views.

Dr. Horne, in reply.—I have to thank the Society for their kind hearing of my paper and their full discussion of it. The members are, I think, unanimous that in these cases of so-called concealed accidental hæmorrhage the membranes should not be ruptured. I think, also, that it seems to be their opinion that as regards the "expectant" line of treatment we should recognise various possible stages of hæmorrhage. Undoubtedly where there is complete collapse the treatment must be active, and the uterus must be emptied. On the other hand, where there is only a small amount of hæmorrhage the treatment may be of a more expectant character. I am also glad that we have had attention drawn to several different forms of concealed hæmorrhage.

The Society then adjourned.

ENLARGED CERVICAL LYMPHATIC GLANDS.

Prof. S. W. Gross has found the daily local application of the following ointment of striking benefit in a case of the above:—℞. Iodoformi, ʒ iss; Ext. Belladonnæ, Balsami Peru., āā ʒ ij; Ung. Petrolei, q. s. ad ʒ ij. M. Fiat unguent.—*Med. and Surg. Reporter.*

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

President—William Stokes, M.D., F.R.C.S.I.
Secretary—E. H. Bennett, M.D.

Fatal Perforation of the Vermiform Appendix.—The President said: On last Wednesday evening at half past eleven o'clock I was summoned to the Richmond Hospital to see a case which was stated to be one of urgency. I found that the patient was a lad of sixteen years of age. I learned that eight days previously he had been seized with sudden and violent pain in the abdomen, and after that his bowels ceased to act. He was treated by the dispensary medical officer according to various methods, including injections of turpentine and doses of castor-oil. None of these had the slightest effect in obtaining a movement of his bowels. On the eighth day his parents became very much alarmed and sent to the hospital, and one of the resident clinical clerks, Mr. Stone, volunteered to go and see the boy. He found him in a state of extreme prostration, and almost pulseless. He asked if the boy had ever had a hernia, and was told that he had, but that for some time he had ceased to wear a truss. The external evidences of hernia had disappeared; but thinking it possible that internal strangulation at the situation of the hernia—namely, on the right side—had possibly taken place, the clinical clerk urged the boy's parents to send him to hospital at once. This was done, and Mr. Kidd, the resident surgeon, examined the patient carefully, but found no evidence whatever of hernia. The patient was in a state of extreme collapse, almost pulseless, his extremities cold, and his lips livid. He did not then complain of any pain. His chief trouble was a continual vomiting of matter of an extremely fœtid and almost stercoral character. Mr. Kidd endeavoured to pass an instrument up the bowel, but did not succeed to the extent of more than four or four and a half inches. He gave him an injection which immediately came away. A second was attempted, but without success. On my arrival I examined the rectum with my finger, but could not find any obstruction whatever, and it became evident that the obstruction, whatever it was, was beyond the reach of my finger. I made several ineffectual attempts to pass an O'Byrne's tube, and also tried a large catheter, but with the same ill-success. The prostration of the patient was so great that operative interference was out of the question, and we were obliged to content ourselves with the application of hot jars to his extremities, small quantities of brandy and water given internally, hot stupes and poultices

of linseed and mustard to the abdomen, in the hope that some little reaction might take place. When I arrived in the morning I found that the patient had died about an hour after my visit on the previous night. A *post mortem* was made with considerable care by the resident surgeon, Mr. Kidd, and by my clinical clerk, Mr. Cassidi. The small intestines were found to be attached by extensive adhesions to the front wall of the abdomen, and bands of lymph connected and bound them down in every direction, especially in the neighbourhood of the ileocæcal valve and of the vermiform appendix. The colon was perfectly empty, and was represented by a cord-like structure about the size of a little finger. On trying to follow the course of the intestines they found that the vermiform appendix was ulcerated and the extremity of it bound down by adhesions to the intestine. There was an ulcerated opening of the vermiform appendix, and through it a small, hard-looking mass was taken resembling a small bean. It was surrounded with a mass of fæces. As to the nature of this small, hard body, I am not at present prepared to pronounce an opinion, having only got it within the last five minutes. The intestines were agglutinated together by the lymph produced by the inflammation, were of a very unhealthy colour, and looked almost gangrenous. The removal of the whole intestinal tract, the stomach included, was attended with considerable difficulty in consequence of the adhesions, and when the sigmoid flexure of the colon was reached it had to be dissected from the surrounding structures. The large intestine throughout its whole course was so small as to be only capable of hardly admitting a finger. This accounted for the impossibility of passing instruments. You see from the specimen before you the condition of things described in the account of the *post mortem*. The vermiform appendix is closely bound down by adhesions to the intestines, and the adhesions were so strong after the extensive peritonitis that it was difficult to avoid tearing the intestines. They were particularly numerous and strong at a point corresponding to the portion between the ascending and the horizontal portions of the colon. The question is—What was the cause of this? Whether it was caused by the occurrence of the foreign body it is not easy at present to say. I am not in a position to explain what the exact nature of the foreign body is, but we will make a careful examination of it. There is much difficulty involved in the ætiology of the conditions we have to deal with, arising from the fact that there are extremely few specimens illustrating the pathology of the vermiform appendix. The only specimen I could find recorded in the Transactions of the Society is one that was exhibited by Dr. T. E. Little in the year 1870, in which he gave a most interesting account of some abnormal conditions of the vermiform appendix and the morbid conditions that they gave rise to. He mentions two—namely, an abscess in the right iliac fossa, and an internal obstruction of the intestine; and he

mentions three ways in which the latter can be produced. Here we have another condition which I do not think has been fully described—namely, ulceration and perforation of the vermiform appendix, which gave rise most probably to the extensive and universal peritonitis, and which caused death from obstruction of the bowels occasioned by the enormous bands of lymph which mechanically closed the large intestine.

The Rev. Dr. Haughton said some of those present remembered the sensation caused by the death of Mr. Drummond—the only Englishman who ever managed to govern Ireland—who was killed by a grape-stone entering the vermiform appendix and sloughing through it. He (Dr. Haughton) had had in the Zoological Gardens examples of the sloughing of what corresponded to the vermiform appendix in two animals—a Persian cat and a monkey. The cat had been given some lamb, and swallowed a tooth of the animal. It lodged at the junction of the ileum and the colon, and sloughed through them. In the case of the monkey the animal had a typical vermiform appendix, and the *post mortem* appearances were as like as possible to those now before the Society. He dissected the animal, and found a piece of an indiarubber ring about half an inch long, which the monkey had pulled off a lady's parasol and swallowed. That led to ulceration, perforation, and peritonitis. He could not say what the body now exhibited was, but it appeared to him to be like a gall-stone.

Dr. Henry Kennedy mentioned that the late Dr. Benson recorded a case of ulceration of the vermiform appendix arising from the pippin of a lemon. On examination after death it was found that the peritonitis was very local.

The Chairman (Mr. E. Hamilton) mentioned that a gentleman died in England some few months ago from peritonitis produced by a cherry-stone.

The President said it was remarkable in the present case that more fæculent matter did not make its way into the cavity of the abdomen. He believed that the small body served as a plug and prevented it from getting down.

Dr. Evelyn Little said they had a clear account of the lesion in the vermiform appendix, but it was not there that the obstruction took place, but below the flexure of the colon. What was the cause of the obstruction in that situation? If the vermiform appendix had been lacerated, the resulting bands of adhesion would be a common cause of obstruction. There was a considerable area of the gut that seemed to be free from adhesion of any kind. Dr. Abercrombie had traced obstructions of this kind not to any mechanical cause, but to a paralytic condition of a portion of the gut itself.

The President said it was not easy to answer the questions asked without further examination, in order to see whether there was any

cause of obstruction at a distance from the original lesion. His idea was that the lesion of the vermiform appendix was sufficient to set up violent peritonitis, and the lymph thrown out was greater at the point he had indicated than in the vicinity of the original lesion.

Dr. Foot said he could not reconcile the adhesions with any recent attack of peritonitis. He thought they had been months or even years in existence. A contracted condition of the colon was not uncommon. He had frequently seen such colons in the healthiest bodies as small as the one before them.

The Chairman thought it was very possible that part of the canal was distended with air, and that the collapsed colon was the result of the air not having been able to pass on. He would say that death had occurred rather from the general peritonitis than from any actual obstruction whatever, and that in fact obstruction was a secondary matter in the case.

Mr. Kidd mentioned that on two occasions previous to the boy's last illness he had attended the dispensary for some inflammation of the intestines. His father was a painter, and he was himself brought up to the business, and on one occasion he had an attack of lead colic. The last time he was attended was in June, 1881.

Dr. Walter Smith remarked that from the anatomical structure of the vermiform appendix, and the glandular apparatus with which it was provided, it had undoubtedly within itself a machinery of suicide; and he was only surprised that concretions causing ulceration of the coats of the structure and consequent perforation did not oftener occur. He believed that what had been supposed to be foreign bodies, such as fruit-stones, &c., had frequently turned out to be soft waxy bodies representing concretions which had been primarily formed in the vermiform appendix.

Dr. Finny said he had been a member of the Society for a great many years, and he remembered but one case like the present, and in that actual mechanical obstruction had been caused by a pin that a woman swallowed. It passed into the vermiform appendix and caused ulceration, which was followed by peritonitis, of which the woman died. The pin was found coated over with calcareous deposit. Considering the number of foreign bodies that people swallowed during childhood, it was wonderful that the vermiform appendix did not oftener catch them.

Report of the Committee of Reference.—From the examination of Mr. Stokes's specimen of a foreign body found in immediate relation to an ulcerated opening of the vermiform appendix, which opening appeared to have been caused by its lodgment in the appendix—we are of opinion that although at first sight the shape of the body, its size, and external structure suggested that it might be a vegetable seed, a damson-stone, or the like, the section of the body proves by its brittleness, its evident

concentric lamination, and its microscopic structure that it has been formed as a calculus of the vermiform appendix.—*January* 21, 1882.

Carcinoma Gastri.—Dr. J. W. Moore said: In laying this case before the Society I am somewhat at a disadvantage, because the patient was not recently under my care, but under that of my colleague, Dr. Foot, and it is in his unavoidable absence that I exhibit the specimen. The patient was recommended to me in the beginning of last December by the late Dr. Reuben Harvey, who said he had been under his care in Cork-street Fever Hospital during the previous summer, for a severe attack of pneumonia, and that his limbs subsequently swelled, and he had weak cardiac action. His anæmia was extreme. His urine was tested for albumin, but with negative results. When admitted to hospital in December he was rapidly losing flesh. He was five feet ten inches in height, and had weighed fifteen stone, but was only eleven stone when admitted. On the right side of the chest there was feeble respiration at the lower part of the upper lobe; and there was lessened expansion over the same side. No anæmic murmur could be detected, although there was rapid cardiac action when he sat up. He suffered from obstinate constipation. He remained in hospital and was treated for anæmia principally. After some days a careful physical examination was made by Mr. E. Lennon, a member of the clinical class, which revealed the existence, in the lower part of the epigastrium and to the right of the umbilicus, of a large, hard, irregular tumour. The man was fifty years of age, and his time of life suggested the idea that this was a carcinomatous mass. This view was confirmed by the presence in both groins of a considerable number of slightly enlarged glands. Dr. Harvey visited the patient with me on Sunday, the 18th of December, the day before his own fatal illness commenced. We found that he had had an attack of diarrhœa on Friday night, which continued during Saturday. The result of this was a considerable diminution in the size of the tumour, which led us to the conclusion that it had been to some extent caused by a fæcal accumulation. Dr. Harvey suggested that the glands in the groin were not so hard as they usually are in cases of carcinoma, and that perhaps the mass in the abdomen was a lymphadenoma. Afterwards the tumour became more evident. All the time the patient was in hospital tincture of perchloride of iron was given in tolerably free doses. Hence, the occurrence of melæna was not suspected. After Christmas he left hospital, but was re-admitted extremely ill in January, under Dr. Foot's care. He died in a few days. A *post-mortem* examination was made a few hours after death. In the pyloric end of the stomach a very large carcinomatous mass was discovered, which extended a considerable distance into the duodenum. In the stomach lay an enormous clot of blood. It passed through the pylorus into the duodenum, taking

a cast of the latter viscus. The liver was firmly adherent to the stomach. I think the mode of death is interesting. It is clear that the anæmia was due to a persistent internal hæmorrhage, which was concealed by the dark colour of the motions caused by the perchloride of iron. The idea of melæna was not entertained. The heart appears to be healthy, although there is a slight patch of atheroma about the springing of the aorta, and also about the anterior curtain of the mitral valve.

Dr. Evelyn Little said the idea that the large clot was not thrown out at once, but was gradually effused, was hardly consistent with the appearance presented on section of the coagulum. If it had been gradually effused it would have been laminated.

Dr. Walter Smith said where so much blood had been thrown into the stomach it was surprising that the patient had not vomited. The stomach, as was well known, was very intolerant of blood. He saw no explanation of this except that the blood was poured out very shortly before death. If it had been gradually effused during a previous period it would have been disintegrated by the gastric juice.

Dr. Finny said he was reminded of a case which he showed of cancer of the stomach, which was attended with considerable hæmorrhage and in which the patient did not vomit. The first symptom of the hæmorrhage was the copious passing of blood at stool. The blood was traced to the splenic vessels; and the explanation of this patient not vomiting was, that the coats of the stomach had been so disorganised by the cancerous disease that the organ tolerated what it would not have endured if it had been in a healthy condition.

Dr. Moore, in reply, said he quite agreed that the clot was of recent formation. The man was for several days, however, in a dying state. He did not see him before his death, but he learned that he was sinking; and the probability was, that what occasioned his death was a sudden hæmorrhage. At the same time he was sure that the hæmorrhage had been going on slowly for a considerable time before his death.—*February* 18, 1882.

PHYSICAL DIAGNOSIS OF PERITONITIS.

Dr. Austin Flint calls attention (*Medical News*, Feb. 11, 1882) to an important point in the diagnosis of this condition. He says :—"If perforation be the cause of the peritonitis there is more or less gas in the peritoneal cavity; a stratum of gas will then separate the liver and the chest-wall, giving rise to tympanitic resonance on percussion, and, hence, if there be persistence of the normal hepatic flatness, perforation as the cause of the peritonitis may be excluded."

ST. MARY'S HOSPITAL RADFORD LIBRARY MANCHESTER

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, M.D., F.K.Q.C.P.

Vital Statistics

Of the Eight Largest Towns in Ireland, for Four Weeks ending Saturday, March 25, 1882.

Towns	Population in 1881 (Unrevised)	Births Registered	Deaths Registered			Deaths from Zymotic Diseases							Deaths from Phthisis	Annual Rate of Mortality per 1,000 Inhabitants
			Total Number	Under 1 year	At 60 years and upwards	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhœa		
Dublin, -	348,293	830	923	182	170	–	121	4	3	4	20	13	102	34·5
Belfast, -	207,671	565	444	91	70	15	–	4	2	3	9	11	87	27·8
Cork, -	78,361	189	180	29	43	–	1	–	2	4	6	5	31	29·9
Limerick, -	38,600	103	93	21	24	–	–	4	–	–	–	6	9	31·3
Derry, -	28,947	69	66	6	11	–	–	–	2	–	1	2	4	29·7
Waterford,	22,401	50	53	7	11	5	–	–	–	1	3	–	8	30·8
Newry, -	14,782	24	24	2	4	–	–	5	–	2	–	–	5	21·1
Galway, -	14,621	28	25	2	11	–	–	–	–	–	1	–	3	22·3

Remarks.

The death-rate was very high in Dublin, high in Limerick, Waterford, Cork, Derry, and Belfast, moderate in Galway and Newry. It was 23·8 per 1,000 of the population annually in twenty-eight large English towns, including London, in which it was 23·8; 30·2 in the sixteen principal town districts of Ireland; 20·5 in Edinburgh; and 24·9 in Glasgow. If we deduct the deaths of those persons who were admitted into public institutions from localities outside the registration district (23 in number), the death-rate of the Dublin Registration District becomes 33·6 per 1,000, while that within the municipal boundary is as high as 37·1 per 1,000. The deaths registered in Dublin amounted to 923, including 182 of children under one year of age and 170 of persons aged sixty years or upwards. Of the total mortality, therefore, 19·7 per cent., or nearly *one-fifth*, was made up of the deaths of infants under twelve months.

Zymotic diseases caused 183 deaths in Dublin, compared with an average of 144·3 in the corresponding period of the previous ten years.

Thus 20 per cent., or one-fifth of all the registered deaths, was caused by this class of affections. Measles continued very prevalent and fatal, being credited with 121 deaths. This number, however, again shows a slight decline on the deaths in the preceding four weeks (134) and in the first four weeks of the present year (156). Of the 121 fatal cases, 101 occurred in children under five years of age, including 26 infants under twelve months. It is a significant fact that only five of the 121 deaths occurred in all the Dublin hospitals. Smallpox continued prevalent in Belfast, and five deaths resulted from this same disease in Waterford in the first week of the period. Scarlet fever was widely diffused through the towns.

Phthisis destroyed 102 lives in Dublin, 87 in Belfast, and 31 in Cork.

The deaths from diseases of the organs of respiration in Dublin were 207, against a ten-years' average of 217·7; they included 141 from bronchitis (average = 161·8), and as many as 50 from pneumonia (average = 28·8). The great prevalence and fatality of the latter disease is one of the characteristics of the present season.

On Saturday, March 25, the cases of epidemic diseases under treatment in the principal hospitals of Dublin included—smallpox, 0; measles, 18; scarlet fever, 18; typhus, 21; typhoid, 9; pneumonia, 16.

The mean temperature of the four weeks was 46·7° in Dublin, 46·2° at Greenwich, and 43·5° in Edinburgh.

Meteorology.

Abstract of Observations made at Dublin, Lat. 53° 20′ *N., Long.* 6° 15′ *W., for the Month of March*, 1882.

Mean Height of Barometer,	29·935 inches.
Maximal Height of Barometer (on 16th at 9 a.m.),	30·605 ,,
Minimal Height of Barometer (on 1st at 7 30 a.m.),	28·718 ,,
Mean Dry-bulb Temperature,	46·5°.
Mean Wet-bulb Temperature,	43·6°.
Mean Dew-point Temperature,	40·4°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·254 inch.
Mean Humidity,	79·9 per cent.
Highest Temperature in Shade (on 7th),	60·6°.
Lowest Temperature in Shade (on 21st and 22nd),	31·9°.
Lowest Temperature on Grass (Radiation) (on 21st and 22nd),	29·8°.
Mean Amount of Cloud,	59·5 per cent.
Rainfall (on 17 days),	2·260 inches.
Greatest Daily Rainfall,	·611 inch.
General Directions of Wind,	W., S.W.

Remarks.

Very unsettled, stormy, open weather characterised this month, the mean temperature of which was 3·1° above the average of the previous sixteen years in Dublin. The month commenced with a deep and elongated atmospherical depression, within which the barometer was below 28·80 inches, stretching across central Ireland, North Wales, and the midland districts of England. Strong easterly gales were blowing in Scotland, and equally strong westerly gales in the south. Thunder and lightning occurred at the entrance to the English Channel. Thursday, the 2nd, was wet and cold in Dublin, the mountains south of the city being snow-capped. A period of warm, changeable weather, with strong S.W. winds set in on the 7th, on which day the shade thermometer rose to 61° (60·6°) in Dublin, 61° at Parsonstown, and 63° at Nottingham. An anticyclone now formed over France, causing steep gradients and S.W. gales in Ireland on the 8th and 9th. The high pressure system afterwards gradually spread over Ireland and England, its centre generally lying over the English Channel. Very settled, spring-like weather accompanied this anticyclone in eastern Ireland, but on the western coasts conditions, although favourable, were not so settled. In England, owing to the comparative stillness of the air and clearness of the sky, the diurnal ranges of temperature were at this time very large, amounting to upwards of 30° Fahr. within twenty-four hours in London and at some other central English stations. On the 18th the anticyclone broke up, and from the 19th to the close of the month the weather was very changeable and unsettled, with frequent rains and sudden variations of temperature. During this period several depressions passed over the British Islands, and in the rear of one of these strong northerly winds and bitter cold set in on the 21st, lasting for two days. On the day named the weather was particularly inclement, squalls of hail and snow prevailing at intervals. In the north of Ireland snow lay deep upon the ground. On the night of the 25th also there was a downpour of rain, sleet, and snow, in connexion with a deep depression which travelled rapidly eastwards from the south of Ireland to the Netherlands. The last few days were showery and cold, like April. Snow or sleet fell on the 2nd, 21st, and 25th; hail on the 3rd, 21st, 26th, 29th, and 30th. The atmosphere was foggy on the 3rd and 17th. Solar halos were seen on the 11th and 18th; lunar halos on the 3rd and 27th. A bright meteor appeared at 8 p.m. of the 13th. Rainbows were frequently observed.

PERISCOPE.

Edited by G. F. Duffey, M.D., F.K.Q.C.P.

DEATH FOLLOWING THE LOCAL USE OF IODOFORM.

Prof. Fischer reports two cases terminating fatally through the local use of iodoform. In the first case, after an extensive resection of the elbow-joint, and complete drainage of the abscesses, the entire cavity was filled with powdered iodoform, using about 150 to 200 grms. with Listerian dressing. On the evening of the fourth day the patient died in a deep coma, with symptoms of pulmonary œdema. In the second case the cavity of an abscess was also filled with iodoform. There were no untoward results for some days, the patient complaining only after nine days of intense headache, followed by anorexia, nausea, and great depression; pulse more frequent, temperature normal. Iodides were excreted by the urine, and all symptoms similar to those observed in the previous case, the patient dying from pulmonary œdema. In both cases the wound was promising. The conclusion that death was due to iodoform intoxication is derived from a comparative view of the symptoms of the two cases, also from the similarity of the symptoms met with in experiments upon animals, such as increasing impairment of muscular action, great depression and sleepiness; vomiting was absent; the stage of excitation was similar to delirium tremens. Paralysis of the sphincters and vocal cords, retraction of the abdominal walls, contraction of the muscles of the neck, which were present, might have aroused suspicion of meningitis, but the normal temperature and the frequent pulse would exclude this. The result of the autopsy (otherwise negative) showed a fatty degeneration of the heart in both cases, as also a parenchymatous infiltration of the liver and kidneys. The latter is of importance since it is always present in the experiments on animals.—*Medical Bulletin*, Feb., 1882. [Two cases of poisoning by iodoform administered internally are given in our Report on Materia Medica and Therapeutics for June, 1881.—Ed.]

TREATMENT OF DIABETES MELLITUS.

In a discussion on this subject at a recent meeting of the New York Academy of Medicine, Dr. A. A. Smith advocated the following plan of treatment:—Codeia, one-fourth grain, gradually increased to one grain, three times a day, after meals. Also, the tincture of perchloride of iron (twenty drops, three times a day, after meals, not increased), and a

laxative pill consisting of aloes, nux vomica, rhubarb, and extract of hyoscyamus, sufficient to relieve constipation. Strict dietetic treatment was also enforced. Dr. Smith believes that, certainly in the majority of cases, diabetes has its origin in the nervous system. As an explanation of the good effects of codeia, he suggested its action as a direct sedative to the nervous system, not only in a general way, but to the pneumogastric nerve, accepting the theory that disturbances of the glycogenic function of the liver in diabetes was probably due to influences conveyed from the nervous system through the pneumogastric. He looks upon disturbances of the glycogenic function as entirely secondary. Dr. Austin Flint said he had prescribed sulphide of calcium in a considerable number of cases; and though he had not sufficient data from which to draw accurate conclusions, yet he felt that the remedy had a certain amount of curative power. He also concurred with a remark of Dr. Smith's that in a considerable number of cases of diabetes there were grounds for a favourable prognosis. In quite a number of cases, of which he had notes, the recovery had been persistent. Dr. Peters looked upon nux vomica as the best remedy. He had seen its use followed by benefit in a good many cases, and cure in some. There were two large classes of patients: one, stout and obese—this class being quite manageable; the other, thin, nervous, and more or less debilitated, and very unmanageable. There were either two forms of the disease, or two stages, the first stage being manageable, the second stage being unmanageable. Dr. William H. Draper thought that the clinical observations of most physicians would show that the great majority of cases of diabetes are associated with lithæmia; that there is an error in the digestion of nitrogenous foods, as well as in the digestion of carbonaceous foods, in diabetic subjects. He thought it could be shown that many cases of the grave form of diabetes, that form in which dietetic treatment does no good, give a hereditary history of gout, or have illustrated it in their own persons. It would be found also in these cases that there is not only sugar in the urine, but very often an excess of urea and uric acid.—*Med. News*, Feb. 25, 1882.

DISTINCTION BETWEEN ANTE AND POST MORTEM WOUNDS OF INTESTINES.

Accurate knowledge of the distinguishing marks by which to determine that a solution of continuity in an intestine is the result of violence to the living body rather than of accident during the autopsy is of very great importance to the medico-legal inspector; and Dr. W. F. Whitney has done good service in pointing out with clearness the means of differentiation. The relation, he says, which the mucous coat bears to the edges of the wound is characteristic, and when carefully considered will leave little doubt as to the time when the wound was inflicted. In ante-mortem wounds the edges are covered by a protrusion of this mucous

coat. The mucous membrane is loosely connected to the muscular coats, and is movable upon them to a certain extent. If all the coats of the intestine are divided, the edges of the wound will gape from the retraction of the cut muscles, and the lax mucous coat is forced through the opening by the peristaltic movement as far as its attachments will permit, and curls back over the edges of the wound through the action of its elastic fibres. Once over the edges of the wound, the membrane is not retracted again, and in a few hours it develops inflammatory adhesions in its new position. Besides the new position and relations of the mucous coat, there is a slight thickening of all the coats immediately in the neighbourhood of the wound from an infiltration with serum and new cells. In a rupture or perforation from ulcer, the protrusion of the mucous membrane would not occur, because in these cases the mucous coat is extensively destroyed and fastened to the muscular coats by inflammation before the outer layers of tissue yield.—*Boston Med. and Surg. Jour.*, Feb. 2, 1882.

CHLORAL IN ACUTE INFANTILE GASTRO-ENTERITIS.

Dr. Adolf Kjellberg (*Nordiskt med. Arkiv.*, Bd. IV.) concludes that the principal cause of difficulty in treating this affection is the great irritability of the stomach, and that hydrate of chloral serves better than any other drug to check the violent vomiting by which all medicines and foods are rejected, and, besides soothing the child, will often help to arrest diarrhœa. He administers it in the form of an injection, preferably after the bowels have been moved, in doses of 4 to 5 grains for children of from five to six months old, and from 8 to 10 grains to children of twelve to fifteen months of age, only a dessert-spoonful of fluid being used. The enemata may be repeated two or three times daily, if required, the doses also being increased, if they appear to be too small, or it may be associated with other drugs, such as iced champagne or brandy for the vomiting, opium internally or as an enema for the diarrhœa, warm baths with mustard for albuminuria, if present, and stimulants for collapse. Finally, to increase the effect of the chloral, the author is accustomed to add one drop of tincture of opium to the enema, and when stimulants are required, 5 to 15 drops of Hoffman's anodyne.—*Journ. de Méd. de Paris*, Dec. 24, 1881, and *Medical News.*

CORRECTION.

The Reviewer of "Mapother's Physiology, revised by J. F. Knott, F.R.C.S.I.," in our issue of last month, has found that he wronged Mr. Knott in stating he had omitted mention of Nussbaum's experiments on renal secretion, He has also to add that, in attributing to Mr. Knott nine-tenths of the authorship, he under-estimated his proper share of the work—every chapter has been re-written.

In Memoriam.

SIR EDWARD BURROWES SINCLAIR, Knt.;

M.D., M.A., M.A.O. (*honoris causâ*), Univ. Dubl.; F.K.Q.C.P.

The late Sir Edward B. Sinclair was born on the 7th October, 1824, and died on the 24th March, 1882. He was the son of the Rev. Richard Hartly Sinclair, who held the living of Cashel, in the County Longford, as a Vicar in what was then the United Church of England and Ireland. His mother was Eliza, daughter of the late Colonel Burrowes, and grand-niece of the celebrated Peter Burrowes, who was one of the remarkable Irishmen of his day.

The Irish Sinclairs are descended from the St. Clairs of the North of Scotland, and it is pleasantly said of them that, in their migration, they exchanged "Saint" for "Sin."

Edward Sinclair entered the University of Dublin in 1842, where he subsequently graduated in arts and medicine. He was an apprentice and favourite pupil of the late Robert Harrison, Professor of Anatomy and Chirurgery, and acted as his Prosector for five years. He became an accomplished anatomist under Dr. Harrison's teaching, and his natural skill as a draughtsman proved of the greatest value to him in his subsequent brilliant career.

Sir Edward Sinclair took out the membership of the Royal College of Surgeons of England in 1847, the same year in which he graduated in arts in Dublin. He became a Fellow of the King and Queen's College of Physicians in Ireland in 1856, and was elected King's Professor of Midwifery in 1867, under the provisions of the Amendment Act of the School of Physic Act.

At the commencement of his professional career he entered the army as Assistant-Surgeon in H. M. "Royal Scots," but after a few years' service in that regiment he left the army to take the appointment of Assistant-Physician in the Rotunda Lying-in Hospital.

The comparatively short military medical experience that Sir Edward Sinclair had, afforded him ample evidence of the discomforts, not to speak of dangers, that the wives of soldiers underwent in parturition from the want of educated midwives to attend them in their hour of trouble. In 1869, with the sanction and co-operation of H.R.H. the Duke of Cambridge, of the then head of the Army Medical Department, and of the Board of Governors of Sir Patrick Dun's Hospital, he established a School of Army Midwives in connexion with Sir P. Dun's Maternity, in which he had the happiness to train nearly 500 wives of soldiers and non-commissioned officers, before death closed his laborious and disinterested career.

Sir Edward received in the summer of 1880 the honour of Knighthood from Her Majesty, in recognition of these important services to the army.

He was Secretary to the Vaccine Department of the Local Government Board, and as such was responsible for the supply of vaccine lymph for all Ireland.

At the close of his period of service in the Rotunda Hospital, Sir Edward Sinclair, in conjunction with Dr. George Johnston (Master of the Hospital), published a most valuable work on Practical Midwifery, in which 13,748 cases are classified and described.

Notwithstanding his duties as professor and clinical teacher, he found time to publish some valuable contributions to medical science, including papers on "Extra-Uterine Pregnancy," on "Induction of Premature Labour by the Water-Douche, and on a new Instrument for applying it." He also published an account of "Nægele's Deformity of the Pelvis," which he was the first observer to diagnose during life. All these papers appeared from time to time in the pages of this Journal.

Sir Edward Sinclair possessed very remarkable powers as a lecturer

and teacher; he had a ready command of words, and great taste in the selection of the most appropriate; but his real teaching power consisted in the manner in which he succeeded in gauging the "standpoint" of his hearers, whether they were educated university students or ignorant soldiers' wives; he always succeeded in kindling their sympathy, and carrying them along with him in his well-considered and systematic course of training.

At a meeting of the King and Queen's College of Physicians in Ireland, held on Friday, March 31, 1882, the College unanimously resolved—"That the President and Fellows of the King and Queen's College of Physicians in Ireland desire to place on record their sense of the great loss which the College and the medical profession have sustained by the death of Sir Edward Burrowes Sinclair, King's Professor of Midwifery in the School of Physic; and hereby offer to Lady Sinclair and the other members of the late Professor's family their respectful and heartfelt sympathy in the irreparable loss they have sustained by his premature death, at a time when he seemed likely to add largely to the great benefits he had already conferred upon the medical profession and charitable institutions of Dublin connected with the branch of medicine which he had made his special study."

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

JUNE 1, 1882.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XXI.—*On the Occurrence of Protocatechuic Acid in Urine.* By WALTER G. SMITH, M.D., Dublin; F.K.Q.C.P.I.; King's Professor of Materia Medica; Physician to Sir Patrick Dun's Hospital.[a]

WITHIN the last few years the application of chemistry to physiology has been pushed with vigour by an active school of workers, and novel and interesting results of considerable importance to biological problems have been already obtained. A little more than two years ago Dr. Purser gave a lucid summary of our knowledge as to the occurrence of indigo-producing substances in the urine, and showed that their origin is due to certain processes of putrefaction which take place in the alimentary tube, chiefly in connexion with pancreatic digestion (*Dublin Journal of Medical Science*, Jan., 1880, p. 55).

These indigogenous bodies belong to the "aromatic series" of chemical compounds, and in my present paper I propose to deal with the occurrence in the urine of another member of this series, the physiological relations of which group have been investigated with remarkable success during the past five years.

In December last Dr. J. W. Moore submitted to me a specimen of curious urine which he had received for examination from Dr. George C. Armstrong, Blackrock, Co. Dublin. It was exhibited and discussed at a meeting of the Medical Society of the College of Physicians (*Dublin Journal of Medical Science*, Jan. 1882, p. 53).

[a] Read before the Dublin Biological Club, April 18, 1882.

The urine was passed by a little girl, aged three years, apparently in perfect health, and not taking any medicine whatever. Dr. Armstrong had attended the mother three years previously in severe puerperal convulsions. I examined the mother's urine and found it normal in every respect. It was not darkened by liquor potassæ even after boiling. The mother remarked that the child's urine, although perfectly normal in appearance when first passed, on being allowed to stand, deepened in colour and stained the child's linen. This was more noticeable whenever the child had a cold or other slight ailment. Some of the urine was sent to Dr. Tichborne, who noted the following points:—Sp. gr. at 60° F., 1·025. Reaction acid; slight deposit of urates. Neither bile nor albumin was present. Urea = 1·2 per cent.; *i.e.*, 5·25 grs. per fluid ounce. Dr. Tichborne also remarked that "this urine presented a great peculiarity; it contained a substance which is only met with occasionally, and which has been termed alkapton." The term "alkapton" was introduced by Bödeker in 1861 (*Ann. Chem. und Pharm.*, Vol. 117, Jan., 1861) to designate a peculiar body occurring rarely in urine, and which he distinguished by these characters:—1. Strong alkalies darken the urine without the application of heat, and the coloration proceeds *from the surface of the liquid downwards—i.e.*, oxidation cooperates with the alkali;[a] hence, alkapton (alkali, ἅπτω). 2. Reduction, at least partially, of the copper test. 3. Non-fermentation with yeast.

In all of these respects the results upon testing the child's urine agreed with Bödeker's statements. [Experiments shown with a sample of the fresh urine—*i.e.*, four months after first observation.] The urine afforded no indigo reaction; it quickly reduced nitrate of silver, and exerted slight action on Löwe's bismuth test for sugar, but with neutral $Fe_2 Cl_6$ it gave a distinct green colour, turned reddish-brown by subsequent addition of alkali.

I may observe at once that the word alkapton conveys no real information, and was given at a time when the physiological chemistry of the urine was very imperfectly understood. Bödeker's experiments simply showed that the urine contained a reducing substance with a strong affinity for oxygen.

From various considerations it appeared probable that the pecu-

[a] Several substances confer upon urine the property of darkening with an alkali from above downwards, *e.g.*—1. Pyrogallol. 2. Pyrocatechol. 3. Protocatechuic acid. 4. Hydroquinol. 5. Carbolic urine sometimes, owing probably to oxidation of free hydroquinol, derived from the gradual splitting up of hydroquinol-sulphuric acid.—(Maly; Virchow, and Hirsch. Jahresber. 1879, I., p. 144.)

liar substance or substances in the urine belonged to the aromatic series. Through Dr. Armstrong's courtesy I was furnished with additional supplies of the child's urine, and proceeded to investigate it in the laboratory of Trinity College, Dublin, by permission of Dr. Emerson Reynolds, to whose assistance I am much indebted.

Before entering into the details of the analysis, it may not be unacceptable to give some account of the recent literature bearing upon the subject of my communication. The excellent *Zeitschrift für Physiologische Chemie*, started by Hoppe-Seyler in 1877, represents much of the best work of the chemico-physiological school in Germany, and from it and from Hoppe-Seyler's *Physiologische Chemie* (1877–81) most of what follows is taken.

It may be well to premise that the term "aromatic compounds" is applied in chemistry in a technical sense. It includes a very large class of bodies, containing each at least 6 atoms of carbon, and represented by the fundamental hydrocarbon, benzene, C_6H_6, with its homologues, and their numerous derivatives. The group obtained its name from the fact that many of its members occur in bodies possessing an aromatic odour, such as essential oils, gum-resins, &c. Carbolic acid (phenol) is one of its best known members, and the relations of a few of them to each other and to benzene (benzol) are easily seen from the subjoined formulæ:—

Benzene, - - - - - $C_6H_6 = C_6H_5H$

(*a*). Phenol (carbolic acid), - - $C_6H_5(HO)$

(Cresol and thymol are homologues of it).

(*b*). { Pyrocatechol (oxy-phenic acid), - / Hydroquinol, - - - / Resorcinol, - - - } $C_6H_4(HO)_2$

(*c*). Pyrogallol[a] (pyrogallic acid), - - $C_6H_3(HO)_3$

This chemically-associated group of bodies has also much in common in relation to their physiological actions, and to their practical and therapeutical applications.

The occurrence of aromatic bodies in the urine is chiefly, but not altogether, dependent upon the food, for the urine is not quite free from them even after long-continued fasting. When aromatic compounds are introduced with the food into the intestinal canal, or into the blood, directly or indirectly, or even when merely applied to the skin (carbolic acid), they, as a rule, suffer

[a] It is proposed to restrict the termination "ol" to hydroxyl derivatives of hydrocarbons—*i.e.*, to compounds of alcoholic character.—(Suggestions for Chemical Nomenclature. Watts' Dict. of Chem., 3rd Suppl., p. 1420.)

only partial decomposition after absorption, although they may be of an easily oxidisable nature. For the most part they pass into the urine either unaltered or partially oxidised, sometimes in combination with other bodies. In this respect there is a marked difference between the fatty and the aromatic compounds. When large quantities of fat, sugar, or albumen are introduced into the system they are almost completely decomposed into CO_2, H_2O, and urea; while, on the other hand, aromatic substances, even so easily oxidisable as pyrocatechol and pyrogallol, pass through the organism unchanged in great part, so much so that de Jonge was able to demonstrate the existence of pyrocatechol in the urine of a rabbit, to which only 4 milligr. of pyrocatechol had been administered. The aromatic substances which occur in urine may be classed under four groups:—

1. Acid sulphuric ethers, of which phenol-sulphuric acid ($C_6H_5HSO_4$) is the simplest representative.

2. Glycocoll-combinations of aromatic bodies, of which the best known and most important representative is hippuric acid.

3. Combinations with glycuronic acid ($C_6H_{10}O_7$), of which few are as yet known.

4. Uncombined aromatic compounds—*e. g.*, coumarin.

With the exception of hippuric acid and a few analogous compounds our knowledge of the other aromatic bodies is of very recent acquisition, and to E. Baumann largely belongs the merit of having successfully investigated the behaviour of aromatic compounds in the animal economy, and the alterations which they undergo in their passage into the urine. Thirty years ago Städeler showed that the urine of cattle and of men contained substances which, upon distillation with diluted sulphuric acid, yielded phenol along with other aromatic products, and in 1876 Baumann proved that phenol and its allies were excreted in the urine in the form of ethereal combinations with sulphuric acid. Combinations of hydrochinol, pyrocatechol, and resorcinol with sulphuric acid, as compound ethers, were first observed by Baumann and Herter in the urine of dogs, to whom these derivatives of benzol had been given. After the administration of benzol, pyrocatechol and hydroquinol are found in human urine. Phenol also partly passes into these bodies, and benzol is partly oxidised into phenol. Baumann and Preusse ascribe the dark colour of carbolic urine to hydroquinol. Traces of pyrocatechol-sulphuric acid frequently occur in human urine (Baumann), and occasionally

more abundantly,[a] independently of the admixture of pyrocatechol with the food. Pyrocatechol was first found by Ebstein and Müller (Virchow, *Archiv.* LXII., p. 554) in the urine of a child, and additional cases have been recorded by Fürbringer and Fleischer. Neubauer and Vogel (7te Aufl., 1876) suggest that Bödeker's alkapton was probably pyrocatechol, and Eichhorst (*Lehrbuch der physikal. Untersuchungsmeth.*, Th. II., 1881, p. 279) also is of the same opinion in regard to Bödeker's and Fürbringer's cases. But Ebstein and Müller (*loc. cit.*) do not allow that what they describe as pyrocatechol agrees with Bödeker's alkapton, which was said to contain nitrogen. When pyrocatechol is administered along with the food, it escapes freely as a conjugate in the urine, which shows a corresponding diminution of sulphuric acid in the form of sulphates.

Now each of these bodies above referred to would be liable to reduce alkaline copper solutions, and when present in any considerable quantity may, it is easy to see, give rise to fallacies in testing for sugar.

Moreover, there are now and then found in the urine, under very different circumstances, substances which reduce copper in alkaline solution, are *lævogyrate*,[b] rarely dextrogyrate, and which have usually passed for sugar, but which have not hitherto been isolated. Upon the interesting and much-vexed question whether grape sugar occurs in normal urine, Hoppe-Seyler holds that, as a rule, sugar is not present, but that substances occur in normal urine, in small and variable amount, which are closely allied (*e. g.*, glycuronic acid) to grape sugar, and which are so easily decomposed that their identification is attended with great difficulty.

To return now to the method of analysis pursued in the present case.

After a preliminary trial by another method, a sample of the urine was examined in the following manner :—

Dec. 19th, 1881.—About eight ounces were cautiously precipitated with neutral acetate of lead, and filtered.

[a] Constantly in the urine of horses. The dark colour of the urine of herbivora, as well as the brownish colour of their blood plasma and serum, are probably due to decomposition products of aromatic substances, such as pyrocatechol and pyrogallol.

[b] Lævogyrate bodies occur in the urine of man and animals after the administration of chloral hydrate, nitro-toluol, camphor, and phenetol. After the administration of brom-benzol the fresh urine is strongly lævogyrate, and this optical activity is very easily destroyed by dilute acids and alkalies, or by heat.

ST MARY'S COLLEGE RADFORD LIBRARY

The lead precipitate was decomposed by H_2S, and tested by ferric chloride and alkali, but exhibited a mere tinge of coloration, probably due to incomplete washing of the precipitate.

The filtrate from the acetate of lead reacted strongly (brown) with NaOH, and was then treated with an excess of basic acetate of lead, and filtered.

This filtrate gave no colour reaction with ferric chloride and alkali—*i.e.*, the substance sought for was entirely carried down by the basic acetate.

Basic acetate of lead precipitate. Diffused in water, and passed in H_2S, filtered.

Filtrate perfectly colourless. Turned brown with KOH, and green with Fe_2Cl_6.

Distilled in an atmosphere of CO_2.

Distillate.	Residue.
No reaction with Fe_2Cl_6.	Diluted.
	Bluish green with Fe_2Cl_6, turned clear dark-red by excess of ammonium carbonate.

I was at first disposed to assign this case to the same category as Ebstein and Müller's case of pyrocatechol, but Preusse has shown (*Zeitsch. für physiol. Chem.*, II., p. 324), that pyrocatechol has been frequently confounded with protocatechuic acid ($C_7H_6O_4$).[a]

The two bodies can be separated and distinguished from each other as follows:—

$C_6H_4\{^{OH}_{OH}$	$C_6H_3\{^{(OH)_2}_{CO_2H}$
Pyrocatechol.	Protocatechuic Acid.
Upon distillation passes over with watery vapour.	Does not.
In alkaline solution is soluble in ether.	Is insoluble.
Green with Fe_2Cl_6, turned violet by alkalies.	Green with Fe_2Cl_6, reddened by addition of alkali.

I concluded then that the substance I had to deal with was protocatechuic acid, (1) because it did not volatilise upon distilla-

[a] One of the forms of dioxybenzoic acid. Best got by fusing East Indian kino with caustic soda (Watt's Dict., Vol IV., and 2nd Supplement).

tion,[a] and (2) on account of the characteristic colour reaction with ferric chloride and alkalies obtained (*a*) directly with the fresh urine, and (*b*) with the isolated product of analysis.

I greatly regret that it was not possible, from the material at my command, to prepare enough of the pure product to submit it to elementary analysis.

Upon mentioning the subject to my friend, Professor W. N. Hartley, he suggested that optical examination would aid in the identification of the substance, and he was good enough to take the trouble to examine the urine, and to send me the following laboratory note :—

"The urine, unmixed with other substances, gave a fine green colour, with a neutral solution of ferric chloride, which turned to a red on the addition of ammonium carbonate. The same reaction was observed with a freshly-prepared solution of protocatechuic acid, the peculiar tints being the same in each case. The urine had a slightly right-handed rotation. In order to separate protocatechuic acid, if possible, acetate of lead was added to the urine, the phosphates were filtered off, and the liquid was evaporated by boiling *in vacuo*. Subsequently cooling and standing caused crystals to separate. The crystals were examined under the microscope; they formed stellate groups. On treatment with ferric chloride, only a transient green coloration was seen; subsequent treatment with ammonic carbonate precipitated the ferric compound, but on standing for an hour this redissolved, with the production of the striking colour before observed. Alcohol (absolute) was added in about double the volume of the urine; the liquid was filtered, and evaporated spontaneously *in vacuo* till reduced sufficiently in volume to admit of spectroscopic examination. The spectroscopic method was that devised by me, described in the *Phil. Trans.*, Part I., 1879. This enables one to detect any aromatic derivative by means of the characteristic selective absorption that such bodies exert on the ultra-violet spectrum. The absorption bands have their position and width registered by photography, the entire spectrum being focussed on one plate. For a description of the instrument and process, see *Science Proc. Roy. Dub. Soc.*, 1881. About fourteen photographs of the spectra yielded by protoca-

[a] In Ebstein and Müller's case the pyrocatechol (?) did not come over upon distillation of the urine, either alone, or acidulated, or rendered alkaline. Ten cc. of the urine, with caustic potash, under mercury, absorbed 6–8 cc. of oxygen. The peculiarity of the urine, first noticed when the child was four months of age, was still observed a year later.

techuic acid in solutions of different strengths were taken. These were compared with photographs of the urine concentrated to $\frac{1}{20}$th its original volume, and diluted with various proportions of water. Only a general result confirming the colour reactions was obtained, because no weighable quantity of the crystallised substance was separated from the urine. Otherwise accurate quantitative results and an absolute proof of the identity of protocatechuic acid with that of the body in the urine could be obtained by constructing what I have called dilution curves for registering the relative positions and intensity of the absorption bands in solutions of different strengths. From a comparison of the two series of photographs, I should say that the proportion of protocatechuic acid in the urine was about 1 part in 10,000, and was certainly not so much as 1 in 5,000 parts of the liquid."

When protocatechuic acid, which, according to Hoppe-Seyler (*Phys. Chem.*, p. 840), is widely diffused in the green parts of plants either free or in an easily-decomposed combination, is administered to animals with their food, the urine is found to contain pyrocatechol-sulphuric acid along with protocatechuic-sulphuric acid and free protocatechuic acid, but, so far as I am aware, no case has hitherto been recorded of the occurrence of protocatechuic acid in human urine.

ART. XXII.—*On the Therapeutic Properties of Quinine Iodate and Bromate; and on the Physiological Activity of Superoxidised Molecules.*[a] By CHARLES A. CAMERON, M.D., M. Coll. Phys.; Fellow and Professor of Chemistry and Hygiene, Royal College of Surgeons in Ireland; Vice-President of the Society of Public Analysts of Great Britain and Ireland, &c.

THE researches of Arthur Gamgee, Priestly, and Larmuth have shown that the three forms of phosphoric acid and of vanadic acid have very different degrees of physiological activity. The salts of orthophosphoric acid are almost inert when their bases are inactive, whilst the pyrophosphates and metaphosphates are poisonous. The orthovanadic acid is poisonous, but pyrovanadic acid and metavanadic acid are still more poisonous.

The high physiological activity of the pyro and metaphosphates has been attributed to the unsaturated condition of their nuclei.

[a] Read before the Medical Society of the King and Queen's College of Physicians, Wednesday, May 3, 1882. [For the discussion on this paper see page 530.]

These salts are not statical, for they can take up additional basic material. For example, calcium metaphosphate can combine with two molecules of lime to produce a molecule of calcium orthophosphate—

$$Ca(PO_3)_2 + 2CaO = Ca_3(PO_4)_2.$$

Carbon dioxide and carbon monoxide are poisonous, but the latter is by far the more poisonous. According to the modern doctrine of atomicity carbon atoms have four "bonds"—that is, a carbon atom has an atom-fixing power equal to that of four atoms of hydrogen or other monad elements. In carbon dioxide the four bonds of the carbon atom are fully satisfied by the four bonds of the two oxygen atoms—

$$O=C=O.$$

In carbon monoxide only two of the carbon atom bonds are in combination with oxygen, and the remaining bonds combine with each other—

$$<C=O.$$

Such a molecule is said to be unsaturated.

High Molecular Weights a cause of Physiological Activity.—High atomic weight and complex molecular structure are stated to be causes of high physiological activity. The poisonous elements have as a rule higher atomic weights than elements belonging to the same groups which are comparatively physiologically inert. There are, however, exceptions to these rules. Lithium with an atomic weight of 7 is more active than sodium with an atomic weight of 23. Arsenic with a lower atomic weight than antimony is more poisonous than the latter. Chlorine in the free state is more active than iodine, though on the whole the iodine compounds used in medicine have somewhat smaller doses than the corresponding chlorine compounds.

Rabuteau found that with one exception (that of methyl alcohol) the toxic power of the alcohols increased with their molecular weight. Amyl alcohol, which has a molecule composed of 18 atoms, is eight times more poisonous than ethyl alcohol, the molecule of which contains 9 atoms. On the other hand, oxalic acid has a molecular weight of 90, and is poisonous, whilst malic acid, with a molecular weight of 134, is a constituent of wholesome fruits. Albumin has a very high molecular weight.

Superoxidised Bodies.—Physiological activity seems to be more influenced by an unsaturated condition of molecules than by their molecular weight or degree of complexity. It is also, I am dis-

posed to believe, influenced by a condition of molecules which I venture to describe as *superoxidised*. In potassium iodide we have according to the doctrine of quantivalency a saturated molecule. The salt is composed of two monad elements, and the unit of equivalence of each of its two atoms is fully satisfied. According to the graphic, or pictorial method of representation the molecule is constituted as follows—

K—I.

Although potassium iodide is a saturated and stable body, three or four atoms of oxygen may be combined with it so as to form potassium iodate (KIO_3) or potassium periodate (KIO_4). In the latter salt only two of the atoms of oxygen are in union with the potassium and iodine, six oxygen bonds satisfying each other—

K—O—O—O—O—I.

In this compound there are three atoms of oxygen in excess of the number requisite to saturate the iodine and potassium; hence we may term potassium periodate a superoxidised compound.

Periodic anhydride is a more striking example of a superoxidised body. It is composed of two atoms of iodine combined with seven of oxygen—

I—O—O—O—O—O—O—O—I.

In this compound only two of the fourteen oxygen bonds are in combination with the iodine.

It may of course be said that iodine is a septivalent element, but in atom-fixing power it acts in general like other monads.

If we hold that iodine and bromine are monads, then the higher terms of their oxygen series may be regarded as in reality unsaturated molecules. They contain oxygen atoms combined only with other oxygen atoms. Such compounds are unstable. They are all decomposed by simple heat at comparatively low temperatures.

When superoxigenated compounds are introduced into the system, it might be expected that their oxygen being loosely combined would unite readily with elements of the blood. It is, however, stated that potassium chlorate passes through the body unchanged. It is open to doubt whether or not the whole of the chlorate taken appears subsequently in the urine. It has been alleged that quinine passes unchanged through the body, but it is now known that only two-thirds of the quinine taken into the stomach can be detected subsequently in the urine. Even if all the potassium chlorate taken were found afterwards in the urine,

that would not be positive proof that the potassium chlorate had not been partially deoxidised and reoxidised in its passage through the system. Besides, drugs produce powerful catalytic effects without undergoing themselves any chemical changes.

Potassium iodate appears to act more powerfully upon the system than potassium iodide. I know a person, accustomed to take ten grain doses of potassium iodide without experiencing any unpleasant symptoms, who cannot take even five grains of the iodate without being attacked by coryza.

I am disposed to believe that the chlorates, bromates, and iodates are more active physiological agents than the corresponding chlorides, bromides, and iodides. They are all composed of superoxidised molecules. It is certain that chlorate of sodium is more powerful than chloride of sodium, or common salt. We may from analogy infer that iodate of potassium is a more active physiological agent than the iodide of potassium.

Ferric Iodate.—Some years ago I suggested the use of ferric iodate ($Fe_2(IO_3)_6$) as a substitute for the unstable ferrous iodide.[a] It was largely prescribed in Dublin, and although a nearly insoluble salt it was found in large doses to produce iodism. It was favourably noticed by Dr. Anstie in *The Practitioner* for June, 1869, page 366.

Quinine Iodate.—Last year I gave a formula for the preparation of iodate of quinine, in combination with an effervescing preparation, to Messrs. J. J. Graham & Co., of Westmoreland-street, Dublin, and since last May they have, as they inform me, disposed of nearly one cwt. of the compound. It has been prescribed largely by Mr. Porter, Surgeon to her Majesty; Dr. Samuel Gordon, Professor Moore, Dr. Smyly, Professor Macnamara, and many other leading practitioners. These gentlemen inform me that they have found it a very useful remedy in the treatment of neuralgia, severe articular pains which had resisted the employment of the usual remedies, sluggish forms of pulmonary congestion, secondary syphilitic disease, and malarial enlargement of the spleen.

Iodate of quinine is a salt which appears to have been scarcely studied. Only two references to its existence are to be found in the books and journals relating to chemistry and pharmacy. Sérullas states (*Annales de Chimie et de Physique*, T. 45, 282) that it may be prepared by dissolving quinine in a hot solution of iodic

[a] Dublin Quarterly Journal of Med. Science. May, 1869. Vol. XLVII. P. 354.

acid, and that on cooling the solution the salt crystallises out in a form resembling sulphate of quinine. Sérullas does not appear to have analysed the salt. According to Pelletier and Caventou (*Annales de Chimie et de Physique*) both iodate and hydriodate of quinine are formed by digesting quinine and iodine by the aid of heat.

Quinine iodate may be prepared by digesting freshly precipitated and still moist quinine with a warm solution of iodic acid in the proportion of a molecule of each (the iodic acid should be dissolved in eight or ten parts of water). The resulting mass cannot be dried at the water-bath heat, as it causes some decomposition of the salt. Dried at a temperature of 60° F., and then placed in vacuo over sulphuric acid, it undergoes no further loss of weight. The salt has a white-pearly appearance, and consists of extremely minute needle-shaped crystals, which contain no water. Boiling water does not decompose it. It is very slightly affected by strong sulphuric acid. Hydrochloric acid and dilute sulphuric acid dissolve it readily; it is not quite so soluble in acetic acid. Spirit of wine effects its solution readily, but in ether and chloroform it is sparingly soluble. Seven hundred parts of cold water dissolve one part of the iodate; in warm water it dissolves much more readily.

The mean of several determinations of the amount of iodine in the dried iodate of quinine gave 21·8 per cent. The salt has therefore the following formula:—

$$C_{20}H_{24}O_2N_{21}HIO_3.$$

The theoretical amount of iodine for such a formula is 22·92, but the small deficiency in the salt was due to the presence of a little free quinine; the iodate was found to be faintly alkaline from this cause.

The granulated effervescing iodate of quinine is composed of a mixture of the Pharmacopœian compound of sodium bicarbonate and citric and tartaric acids with the iodate. Each drachm of the compound contains two grains, or one dose, of the iodate.

I have not made many examinations of the urine of persons under administration of quinine iodate. In the case of a patient of Dr. Elliott who was using the iodate for about a fortnight, the urine contained so much free hydriodic acid or iodides that it gave a yellow precipitate with nitrate of lead. In another case iodic acid and hydriodic acid were detected in the urine within half an hour after the iodate had been taken, but no trace of quinine could be found in it. In the urine of the same person, passed three hours later, quinine was found.

Bromate of Quinine ($C_{20}H_{24}N_2O_2HBrO_3$).—I can find no account of this salt in the chemical books or journals. So far as I am aware it has not been described up to the present. It may be prepared by precipitating barium iodate by sulphate of quinine, or by neutralising quinine with bromic acid. It occurs when air-dried in small asbestos-like masses, which, under the microscope, are seen to consist of very long needles.

Quinine bromate has the same constitution as the iodate of quinine, but it is more soluble in water—namely, 1 part in 250. Warm water dissolves it freely. The dry salt may be heated on the water-bath without discoloration, but its solution, when evaporated to dryness, leaves a residue more or less decomposed. The salt dissolves readily in hydrochloric and dilute sulphuric acids, and in spirit of wine. Acetic acid acts less readily upon it. Touched with a drop of strong sulphuric acid it detonates, emits a puff of dark smoke, and almost wholly disappears. On iodate of quinine, sulphuric acid produces only a slight yellow coloration, which vanishes on the addition of water, the salt dissolving and forming a colourless solution.

MEDICAL OPINIONS.

I have been informed by a large number of physicians that they have found the quinine iodate and bromate valuable remedial agents. The following are but a few of the favourable experiences of these drugs which have come to my knowledge:—

Dr. Samuel Gordon, ex-President of the College of Physicians, writes as follows:—"You ask me to let you know in what class of cases I have used the iodate of quinine, and with what success or otherwise. I was first induced to try it in a case of pneumonia, in which the acute symptoms had subsided, but resolution did not seem to be making much progress. I had previously tried quinine and iodide of potassium separately, but without making any impression on the infarcted lung. The granular effervescing iodate of quinine, in teaspoonful doses every four hours, was rapidly successful. I have since ordered it in two or three other similar cases, with invariable success. I tried it also in a few cases of chronic cough, which I supposed to be due to enlarged bronchial glands—in all cases with some alleviation of the symptoms."

Mr. George H. Porter, M.D., Surgeon to her Majesty, states:—"I have now very frequently (since you introduced it) prescribed your iodate of quinine, and feel satisfied that it is a very important

and useful medicine. The cases in which I have seen its marked good effect were strumous enlargement of glands and chronic rheumatic joints."

Professor William Moore, Physician to Sir Patrick Dun's Hospital, writes:—"I found the iodate of quinine most valuable in the severe neuralgic pains associated with thoracic aneurism, and also in cases of sciatica. The 'bromate' I have tried with good effect in a case of hystero-epilepsy."

Dr. R. B. M'Vittie, of 29 Wellington-road, Dublin, writes:—"The iodate of quinine which you recommended to me completely removed the facial neuralgia from which my wife had been a great sufferer by day and night for years, and for which the ordinary quinine had been tried in vain. It is several months since she used the iodate, and the pain has never since returned. If it succeeds as well in other cases as it did in my wife's, it may well be hailed as a beneficent remedy for that grievous malady which, whilst it does not imperil life, makes it an intolerable burthen."

Dr. Tweedy, Physician to Dr. Steevens' Hospital, states:—"A sub-constable of constabulary, aged about twenty-three, who was a patient in Steevens' Hospital, had an acute attack of pneumonia. The greater part of the right lung and patches of the left were involved. Convalescence was very protracted, the whole of the posterior part of the right lung remaining persistently dull for weeks. The patient was very weak, had a troublesome cough, and occasionally perspiration at night. Respiration was tubular at the apex of the lung, but scarcely perceptible along the dorsal aspect. He was treated with quinine, syrup of the iodide of iron, counter-irritants, &c., but there was scarcely any perceptible improvement for more than eight weeks. Having been sent a specimen of Dr. Cameron's iodate of quinine in the granular form, I prescribed it for the patient in teaspoonful doses, three times daily, in effervescence. An improvement in his condition very shortly manifested itself, and in three weeks time the dulness had materially diminished, respiration was re-established over the greater portion of the lung, the night-sweats had ceased, and he had gained flesh considerably. He left the hospital, and I understand is now performing his duties as usual. I may add that in private practice I have used the iodate of quinine with much advantage."

Dr. Macnamara, Professor of Materia Medica, Royal College of

Surgeons, Ireland, informs me that he has used at the Lock Hospital, Dublin, the quinine iodate with great advantage in the secondary forms of syphilitic disease. A young woman in a cachectic state, with ill-conditioned non-suppurating buboes, who for more than two months had not been benefited by the usual remedies, rapidly improved under the administration of three 2-grain doses of bromate of quinine daily.

Dr. Philip C. Smyly has prescribed the bromate and iodate of quinine very extensively, and, after a year's experience of its effects, still continues to recommend it.

ART. XXIII.—*On Hey's "Internal Derangement of the Knee-joint."*[a] By J. F. KNOTT, L.K.Q.C.P.I.; Fellow and Senior Demonstrator of Anatomy, Royal College of Surgeons, Ireland.

IN the volume of "Practical Observations in Surgery," published by Mr. Hey, of Leeds, is included a paper "On Internal Derangement of the Knee-joint," which contains the original description of the very peculiar lesion to which the name of this distinguished surgeon has since been attached. It is given in the following words:—"This joint is not unfrequently affected with an internal derangement of its component parts, and that sometimes in consequence of *trifling* accidents. The disease is, indeed, now and then removed, as suddenly as it is produced, by the natural motions of the joint without surgical assistance; but it may remain for weeks or months, and will then become a serious misfortune, as it causes a considerable degree of lameness. . . . This disorder may happen with or without contusion. In the former the symptoms are equivocal till the effects of the contusion are removed. When no contusion has happened, or the effects of it are removed, the joint, with respect to its shape, appears to be uninjured. If there is any difference from its usual appearance, it is that the ligament of the patella appears more relaxed than in the sound limb. The leg is readily bent or extended by the hands of the surgeon, and without pain to the patient—at most, the degree of uneasiness caused by this flexion or extension is trifling. But the patient himself cannot freely bend, nor perfectly extend, the limb in walking; he is compelled to walk with an invariable and small degree of flexion. Though

[a] A paper read before the University Biological Association, May 11, 1882.

the patient is obliged to keep the leg thus stiff in walking, yet in sitting down the affected joint will move like the other.

"The complaint which I have described may be brought on, I apprehend, by any such alteration in the state of the joint as will prevent the condyles of the os femoris from moving truly in the hollow formed by the semilunar cartilages and articular depressions of the tibia. An unequal tension of the lateral or cross ligaments of the joint, or some slight derangement of the semilunar cartilages may probably be sufficient to bring on the complaint. When the disorder is the effect of contusion, it is most likely that the lateral ligament on one side of the joint may be rendered somewhat more rigid than usual, and hereby prevent that equable motion of the condyles of the os femoris which is necessary for walking with firmness."

Such are the words of the earliest notice of this peculiar injury which we possess, and such is the uncertainty as to the accurate diagnosis in which the original describer has left his readers, and, so far as we can see, was obliged to remain himself. Sir Benjamin Brodie notices Hey's observations, and says that "the symptoms very much resemble those produced by a loose cartilage within the joint," but his views of the actual nature of the lesion seem even more indefinite than those of the latter writer, and he states further on, in reference to a case which occurred in his own practice, that "the facts which I am about to state are not very easy to be reconciled, either with this hypothesis or with that suggested by Mr. Hey." Many, at least, of the surgeons of the present day appear to have made up their minds to a very decided view of the state of things in Hey's internal derangement of the knee-joint; and, without much more conclusive evidence to go upon then than that which was possessed by the distinguished surgeons whose names I have mentioned, unhesitatingly inform their readers or hearers, as the case may be, that the symptoms are due to a luxation of one of the semilunar fibro-cartilages, which are interposed between the cartilaginous surfaces in the femoro-tibial articulation. To examine the validity of the grounds for such a conclusion is my chief object in making this communication. To do so satisfactorily, it will be necessary to call attention to some of the more prominent features in the mechanism of the knee-joint, and to notice the connexion of the fibro-cartilages, which concern us so intimately in this lesion.

The upper end of the tibia presents an extensive surface, bearing

two articular facets separated by a rough non-cartilaginous surface, which runs in an antero-posterior direction, and is chiefly destined for ligamentous attachment. Of these facets the internal is the larger, and of somewhat oval shape, with the long axis passing from before backwards; it is also somewhat more hollow than the other, although the amount of depression on either side is but slight, and is still further diminished by the greater thickness of the articular cartilage in the central part. The outer facet approaches the circular form.

The inferior extremity of the femur is more extensive than the opposed articular surface of the tibia on which it rests. The deep intercondyloid notch separates the two condyles, of which the latter is prolonged downwards considerably further than the external—a disposition which determines the internal obliquity of the shaft of the femur, and the formation of an angle salient inwards on the inner aspect of the knee-joint.

It is obvious that the very shallow depressions on the upper end of the tibia can afford no security for the condyles of the femur during the various movements of the joint. The glenoid cavities for the reception of these articular prominences are, accordingly, almost solely formed by the semilunar cartilages. Each of the latter structures presents three surfaces—a superior, which is markedly concave; an inferior, nearly flat; and an external, forming the prominent rim, which is connected to the fibrous structures surrounding the joint. This rim is about five centimetres in depth; at the inside the cartilage thins down to an irregularly festooned edge. On examination of the mutual relation of these cartilages we find that the external forms almost a complete circle, while the internal forms a C-shaped curve, elongated from before backwards, and of which the extremities embrace those of the outer cartilage. These extremities (*cornua*) are extremely strong, and bind the cartilages with great firmness to the non-articular portions of the osseous surface, while the circumferential aspects of the cartilages are bound to the margin of the head of the tibia by the so-called coronary ligaments. The other surfaces are covered with synovial membrane, and glide smoothly—the upper on the cartilaginous surface of the corresponding femoral condyle, the lower on the head of the tibia. "The fore part of each is less fixed than the hinder, so that it may be free to follow up the condyles as the latter recedes from the front of the tibia in flexion, and be pressed back again into its place in extension" (Humphry). In the case

of the external cartilage the posterior cornu has an accessory attachment to the femur, which accompanies the posterior crucial ligament (*cornu postici adhæsio prima* of Weitbrecht, *ligamentum cruciatum tertium* of Robert). This femoral adhesion causes the cartilage to follow, in a limited degree, the movements of the lower end of the thigh bone; and its nearly circular outline, with the greater looseness of its coronary attachments, and the fact that it does not, like the internal semilunar cartilage, adhere intimately to the corresponding lateral ligament of the joint—all combine to secure to the external cartilage a greater degree of mobility than is permitted to the internal.

The more obvious movements of the knee-joint are those of flexion and extension, characteristic of the ginglymus articulation, of which it forms an imperfect type. In addition to these, the knee possesses, when moderately flexed, a rotatory movement, which, as shown by the brothers Weber, may attain a range of 39 degrees. The vertical axis around which these movements take place passes through the head of the tibia at the *inner* side of the spine. The use of the greater mobility of the outer cartilage is obvious in this action, for if it were absolutely fixed to the head of the tibia, any considerable rotatory movement of the latter bone would throw the external femoral condyle out of its articular cavity.

Slight lateral movements of the *passive* variety may also be demonstrated in the knee-joint when the leg is semi-flexed. In this position, the ligaments being relaxed, external pressure will produce movement of the tibia to either side; the latter bone gliding, to a very limited extent, of course, upon the articular facets of the femoral condyles.

With regard to the more ordinary movements of the knee, an interesting anatomical fact has been demonstrated by Tillaux. This anatomist has pointed out that a vertical antero-posterior section through one of the condyles is not limited at the lower end by an arc of a circle, as formerly represented; the cartilaginous surface represents two arcs—one anterior, and the other posterior, belonging to circles of different radii, and separated by a portion of a very flattened ellipse. The mechanical result of this arrangement is that in flexion of the knee there is, at first, rotation around an anterior axis; towards the middle of the movement, a combination of rotation and gliding, which is, in turn, replaced by a purely rotatory movement towards the end of the

act of flexion. The axis, around which the movements of flexion and extension take place, passes through the femoral condyles at the level of the attachment of the lateral ligaments of the joint.

A careful examination of the various observations of "internal derangement of the knee-joint" that have been placed on record will show that writers on the subject have included, under the same denomination, two distinct varieties of surgical lesion—one, in which the displacement affected the semilunar cartilages only; the other, in which, besides the derangement of the cartilages, there is also a change in the normal relations of the femur and tibia, or, in other words, an incomplete dislocation of the leg.

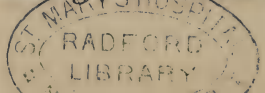
Some cases of the former class were unaccompanied by any prominences or displacement visible externally, as occurred in some of the instances observed by Hey himself. A good example of "internal derangement" has also been recorded by Bonnet (de Lyon):—"A very active man, aged forty-five years, twisted his knee in making a movement of external rotation. I saw him two days after the accident; no physical derangement could be detected in the knee; there was merely a small amount of serous effusion into the synovial cavity. The patient could walk only with extreme pain, he suffered much, and could extend the leg upon the thigh but in a very incomplete manner. This disproportion between the impairment of motion, which was carried to an extreme degree, and the inflammation, which was but slight, made me think that a luxation of the semilunar cartilages had probably taken place. I then flexed the knee as much as possible; this flexion was painful. Having done this a first time, I extended the leg, and flexed again. This manœuvre was followed by immediate relief; the patient was able to walk with less pain, and to extend the leg upon the thigh completely. The inflammation rapidly subsided."

Very valuable evidence with regard to the nature and mechanism of the injury was obtained by this writer from the results of experiments performed on the dead body. In the body of an adult male who had succumbed to a chronic malady, and whose articulations in consequence presented a considerable degree of relaxation, Bonnet found that by flexing the leg to form a right angle with the thigh, as the body lay in the prone position, and suddenly rotating the foot outwards, a peculiar snap was felt, after which the limb remained in the position of external rotation, with the leg flexed upon the thigh at an angle of about 45°. At the antero-internal

aspect of the knee-joint a prominence could be felt corresponding to the inner tuberosity of the tibia; this prominence projected in front of the inner condyle of the femur; the head of the femur was carried backwards and inwards. The rotation of the leg, measured by the deviation of the foot, amounted to nearly a quarter of a circle. Upon extending the leg (for which a slight effort was found necessary) the snapping sensation was again felt, and the normal relations of the articular surfaces were re-established. Subsequent dissection of the knee showed no displacement of the interarticular structures, and no appreciable laceration of either ligaments or muscles. In the next experiment he removed the patella, and, repeating the movements already described, he watched the effect on the interarticular structures. The snapping sensation was then found to be produced by the passage of the inner condyle of the femur behind the semilunar cartilage, which was, accordingly, pushed forwards on the internal glenoid cavity of the tibia, but without any laceration of the internal lateral or capsular ligament of the joint. On the outer side the condyle had undergone no considerable displacement; it was carried a little forwards from its normal position, but still lay in the glenoid cavity formed by the external semilunar cartilage. On extension of the limb, with a little effort, this peculiar luxation was at once reduced. The experiment was frequently repeated with a similar result.

Cases have been observed in the living body corresponding closely with the facts observed by Bonnet on the cadaver. But these cannot properly be regarded as luxations of the semilunar cartilage; they are incomplete rotatory dislocations of the leg itself. The possibility of the existence of a lesion of this kind cannot well be doubted, and the author of the present communication can add to the evidence already published on this subject a description of the accident as it has repeatedly occurred in his own person.

With regard to the other form of displacement, in which the semilunar cartilage alone is said to alter its position without the application of extreme violence, or the coexistence of extensive laceration of the other fibrous structures which enter into the formation of the joint—I look upon its occurrence in the normal anatomical state of the parts as a physical impossibility. Any anatomist who has taken the trouble to test the strength of the cornua which fix the cartilages to the head of the tibia, not to


ST MARY'S HOSPITAL
RADFORD
LIBRARY

mention the accessory fastenings afforded by the coronary, jugal, and tertiary crucial bands, and the adhesions to the capsular and internal lateral ligaments, will have, I think, but small faith in the existence of a displacement engaging the semilunar cartilages only, and produced by a slight amount of external violence.

In many of these cases the history corresponds more or less closely to the following type:—A slight amount of violence is applied to the foot on its inner side, when the knee-joint is flexed to a very slight degree; the ligaments about the knee in the somewhat relaxed condition which corresponds to this posture; and the muscles, as it were, thrown off their guard. A sudden acute pain is then felt in the joint at the inner side, and the patient is unable to move the leg, which remains fixed in a slightly flexed position, with a certain amount of abduction and external rotation. Sir Astley Cooper, whose description of the ætiology of this lesion agrees more closely with my experience than that of any other writer whom I have consulted on the subject, has observed it to occur most frequently when a person in walking strikes his toe, the foot being at the same time *everted*, against any projecting body, such as the fold of a carpet. He also met with the accident in a person who had suddenly turned in bed, when, the clothes not suffering the foot to turn with the body, the thigh-bone was believed to slip from the articular cavities formed by the semilunar fibro-cartilages.

No autopsy has, so far as I have been able to ascertain, demonstrated the actual displacement of one of the semilunar fibro-cartilages of the knee-joint, if we except a case noted by Beid, who discovered (accidentally) in a dead body that the anterior segment of the external cartilage was detached from the tibia, and displaced backwards and inwards. This portion appeared flattened and widened, as if the displacement were of old standing. No history could, however, be obtained.

Verneuil has seen most of the cases of supposed luxation of the fibro-cartilages occur in rheumatic subjects, and would explain the symptoms present by the changes within the joint produced by this disease. He mentions a case in which he took the opportunity of carefully examining the movements of the joint in a highly emaciated patient whom he was treating for some other disease. In this individual, extreme flexion of the knee caused a prominence to form on the outer side corresponding in position and form to the outer margin of the external semilunar fibro-

cartilage. Palpation gave, at the same time, a sensation of crepitation, and the patient felt some pain in the corresponding part of the joint. He observes, in conclusion:—"I believe that in my case no luxation of the fibro-cartilage took place, for the mobility of this cartilage is a normal condition; accordingly, a new element must be added, which I believe to be synovitis."

It is observed by Panas (*Dict. de Méd. et de Chir. Prat.*) that all the cases of luxation of the semilunar cartilages belong to a period when the occurrence of loose cartilages in the interior of joints, and also the existence of arthritis deformans, had still remained unknown pathological facts, and he believes that all the recorded examples of the internal derangement of the knee-joint were but misunderstood cases of one or other of these conditions. In this hypothesis he merely corroborates that already enunciated by Velpeau and by Malgaigne. The latter eminent authority also points out that in the cases in which (as in those recorded by Bassius and Dequevauviller) an abnormal projection was present, and supposed to correspond to the margin of the displaced cartilage, it was found on more careful inquiry that this projection had existed before the occurrence of the injury. In a case observed by himself the projection had existed in a healthy limb, although to a somewhat less degree.

The fact that it may be confounded with a floating body within the joint was demonstrated in a case recorded by Gimelle. This surgeon detailed to the Académie de Médecine (*àpropos* of an observation of luxation of the cartilages communicated by Londe) an account of a *similar* case which he had met with, in which the same diagnosis was made. The supposed luxation recurred frequently, and the repeated trouble led to a closer examination, disclosing the existence of a foreign body, which was afterwards extracted by Larrey.

The most probable cases of luxation of the cartilages which have been recorded are, perhaps, those of Lannelongue and Le Fort (communicated to the Société de Chirurgie in 1879). The former was one of a girl, aged eleven years, in previously good health, and apparently without any form of arthritic diathesis. Ten months before entering hospital she had suddenly, while walking with her mother and without any appreciable cause, experienced a sensation of crackling in the knee-joint. It was not accompanied by any sensation of pain, nor was progression at all impeded. The articular crepitus continued, and accompanied

every movement of the joint. Two months later, walking became impeded; but it was not till eight months had elapsed after the original injury that pain was complained of, when it became so acute on any movement of the limb as to render walking nearly impossible.

Examination of the joint when at rest gave merely negative results; nothing abnormal could be discovered by sight or touch; there was no displacement, and no pain on pressure. When the extended limb was gradually flexed, a crackling sound was perceived as soon as the flexion had attained an angle of about 20 degrees, and, at the same time, a projection formed on the outer aspect of the joint which could be seen and felt. When the limb was brought gradually back to the state of extension from the position of right-angled flexion, as soon as it had passed through an angle of 20 degrees in this direction, another *bruit* was heard louder than the first, with increased prominence of the tumour, after which complete extension (with subsidence of the swelling) followed without further opposition. The evidence of the hand and ear demonstrated that the bruit and the prominence corresponded to the interval between the outer condyle of the femur and the glenoid cavity of the tibia; while the displacement obvious to the eye on the outer side of the joint apparently implicated the external semilunar fibro-cartilage. This prominence formed a transverse ridge, occupying the line of the articulation in the depression on the outer side of the ligamentum patellæ; it was best marked in front, and gradually lost when traced backwards. When the finger was placed on the skin just before the formation of the swelling, it was found to be suddenly elevated with a peculiar vibratory sensation, which conveyed the idea of an elastic band. It was compared by Lannelongue to the elevation of the skin produced by the pulsation of a large artery. After the formation of the swelling it remained till the second bruit indicated the reduction of the displacement. On the inner side of the joint all was normal. The reduction alone was accompanied by marked pain. In this case Lannelongue considers that the only explanation of the phenomena which can be offered is that afforded by admitting the existence of a subluxation of the external semilunar fibro-cartilage. There was no evidence whatever of arthritis deformans; and he believes that the idea of a foreign body is out of the question, as the latter could not always persist in reproducing an identical deformity.

The case of Le Fort possesses a special interest, as it occurred in his own person. The first cause of the accident, as the sufferer himself observes, presents but few poetic details. This eminent surgeon occupied a position similar to that which the author of "Gulliver's Travels" leads us to infer was assumed by his hero when hidden between two leaves of Brobdingnagian sorrel. On this occasion, the Professor, while resting on his feet with both hip and knee-joints strongly flexed, suddenly experienced a distinct sensation of displacement in the outer part of the right knee-joint. When he raised himself from this posture, the knee remained flexed, but a powerful muscular effort restored it to the extended position. This effort was accompanied by acute pain, and a loud crackling sensation, as if some displaced object had suddenly returned to its place. All pain instantly disappeared, and freedom of movement was completely restored. The lesion subsequently appeared on almost every occasion that the knee was forcibly flexed, so that this movement had to be studiously avoided.

These cases afford the best circumstantial evidence which can be produced of the occurrence of luxation of the semilunar cartilages of the knee-joint, from slight or indirect violence. An important case of injury of the knee-joint was communicated to the Pathological Society of Dublin by the late Professor R. W. Smith (Feb. 4, 1865), in which the cartilage appeared to have been displaced by a very unusual form of direct violence. It occurred in a boy of sixteen, who had been wounded in the knee by a hackle-pin, the sharp curved point of which penetrated the joint on the inner side, and close to the line of the long saphena vein. The boy fell backwards, and the hook tore its way out. Escape of synovial fluid was followed by very severe inflammation, which yielded completely to treatment. On recovery, a certain amount of stiffness of the joint remained, the limb tended to remain somewhat flexed, and a distinct projection was found in the position of the wound, which presented a curved outline, was somewhat elastic to the feel, and, manifestly, was not of an osseous nature. The diagnosis in this case was that the hook which penetrated the joint had fixed itself in the internal semilunar fibro-cartilage, and in tearing its way out had displaced this structure from its normal position. The possibility of a certain amount of displacement, accompanied by laceration, in such a case cannot, I think, be questioned. The evidence afforded by the other cases quoted, as well, indeed, as that derived from the less important

examples which we have found recorded by various surgical authorities, is not so conclusive.

Sir Astley Cooper observes that "under extreme degrees of relaxation, or in cases in which there has been increased secretion into the joint, the ligaments become so much lengthened as to allow the cartilages to glide upon the surface of the tibia, and particularly when pressure is made by the thigh bone upon the edge of the cartilage. The cartilages which receive the condyles of the os femoris are united to the tibia by ligaments, and when these ligaments become extremely relaxed and elongated the cartilages are easily pushed from their situations by the condyles of the os femoris, which are then brought into contact with the head of the tibia; and when the limb is attempted to be extended the semilunar cartilages prevent it." There can be, I think, no reasonable ground for refusing assent to these views, as in the case of extreme relaxation of the ligaments, which is supposed by this distinguished authority to exist, the parts of the semilunar cartilages between their cornua must be freely mobile; but the case of a previously healthy joint is a widely different one.

Before summarising my conclusions as to the state of things in the more typical forms of Hey's internal derangement of the knee-joint, I will relate the causes, symptoms, and treatment of the lesion as it has repeatedly occurred in my own person. It has always been the result of *very slight* and, in every instance, *indirect* violence. The violence has always been applied so as to produce a twist of the knee either of the leg outwards or femur inwards. The more common cause was striking the inside of the great toe against something when the knee was slightly flexed, and the parts about the joint as relaxed as possible—when, if I may be allowed to use the expression, the muscles were thrown off their guard. It has never occurred to me when the limb was in a decided state of active movement. It first occurred to me (when a boy) as I was sauntering slowly along a pasture-field in the country. I lightly struck the inner side of the point of my shoe against some elevation in the ground, and was instantly brought to a stand-still by pain of an agonising character developed in the interior of the right knee-joint and on the inner side. Besides the pain, I experienced the mingled sensations of fright and helplessness (as I was alone) to a degree which I have never forgotten. I soon reached the ground, by a movement combined of those of sitting and falling. The joint was slightly flexed, the leg

slightly rotated outwards, and all power of voluntary movement of the limb below the knee entirely lost. As this occurred many years before the commencement of my anatomical and surgical experiences, I made no observations on the position of the bony prominences about the knee-joint. But I applied my hands to either side of the knee, and instinctively made as powerful pressure as I could, with the hope of diminishing the pain. The continuance of the pressure caused the flexion of the joint to diminish, when suddenly I felt an exacerbation of the pain following by a loudly audible clucking sensation, conveyed both to hand and ear. This sound was followed by instantaneous and complete relief. No sequelæ followed. But the lesion frequently reappeared, from similar causes, and always yielded to the same treatment. It has also occurred when, in moving the right foot under a table, the inner side of the great toe has struck lightly against one of the legs. As in the other cases referred to, this has only occurred when the knee was already slightly flexed, and the surrounding structures much relaxed. The total number of my personal experiences of this lesion would amount, I believe, to at least a couple of dozen. Several of these occurred while I was a medical student. I have met with the accident twice since I became possessed of a surgical diploma. I early took an opportunity of informing myself of the probable nature of the "internal derangement" of the knee-joint, and was able on several occasions to examine my own joint with sufficient care while still *deranged*. Careful manipulation has convinced me that the internal semilunar cartilage has never, in my own case, been displaced from its tibial attachments. Two very slight prominences could be detected in every instance in which I made a careful examination—an internal, apparently formed by the projecting lower margin of the inner condyle of the femur; and an antero-external, found on the inner side of the ligamentum patellæ, and due, I believe, to a projection formed by the upper end of the tibia, and the semilunar cartilage still attached thereto.

Accordingly, my explanation of the nature of this lesion, which I look upon as a typical one of Hey's internal derangement of the knee-joint, is that by the combined twisting and lateral movement conveyed to the knee, at a moment when the ligaments are as lax as possible, the margin of the condyle is *jerked over* the edge of the internal semilunar fibro-cartilage. The immediate result is pressure of this structure, which is increased when the resulting pain brings

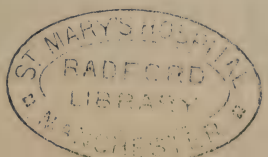
about spasmodic contraction of the surrounding muscles. The leg undergoes in these injuries a rotatory movement which carries the tibia forwards and outwards. A similar rotation of the leg in the opposite direction, and an analogous displacement of the outer condyle occurs, I have no doubt, in case of the rarer variety of "derangement" which is located in the outer part of the joint. The comparative infrequency of this latter is, I think, satisfactorily explained by the greater mobility of the outer cartilage, and the existence of a strong femoral attachment, which secures its adaptation to the varying positions of the outer condyle.

Such I believe to be the only form of displacement which can occur from slight or indirect violence in the otherwise anatomically normal knee-joint. The lesions which occur in pathological conditions I have not examined, as I do not think they should be included in this inquiry.[a]

ART. XXIV.—*Statistics of Midwifery in Australia.* By SAMUEL T. KNAGGS, M.D., F.R.C.S.I., Newcastle, New South Wales.

SOME months ago I had the honour to read before the Dublin Obstetrical Society a paper containing the results of my own private practice in Midwifery, and at that same time I promised shortly to publish the results of the practice of my assistants, Dr. Richard Read, Dr. Robert George Alcorn, Mr. Walker, Dr. Carruthers, and Mr. Treloar. Other engagements, however, prevented my so doing at an earlier opportunity. I now submit them for the consideration of the profession, hoping they will prove of interest as statistics of this most important branch of medical science.

[a] In the discussion on this paper it was remarked by Professor Bennett that a case of dislocation of one of the semilunar cartilages of the knee-joint was recorded by Mr. Bromfield some years *previous* to the appearance of Hey's well-known work. I have since found, on comparing dates, that the cases (two in number) of dislocation of the semilunar cartilages recorded by Bassius (Obs. Anatomico-Chir.-Méd., Decad. II., Obs. V.) saw the light before those of either of the latter observers. For reasons which must be obvious to my readers, I prefer to retain still the nomenclature of Hey, and even to credit him with the original description of the lesion which is the special subject of the above communication, in contradistinction to the questionable one of dislocation of a semilunar fibro-cartilage.



Summary of Cases.—1,430 *Cases.* 14 *Deaths* = 1 *in* 102.

——	Primiparæ	Pluriparæ	Total	Proportion
Face	—	2	2	1 in 715
Face to Pubis	9	18	27	1 „ 53
Upper Extremity—				
Hand and Foot	1	—	1	1 „ 1,430
Shoulder	—	5	5	1 „ 286
Lower Extremity—				
Breech	9	18	27	1 „ 53
Foot	3	6	9	1 „ 158
Prolapse of Cord with				
Feet	1	1	2	1 „ 715
Head	—	2	2	1 „ 715
Shoulder	—	1	1	1 „ 1,430
Twins	6	14	20	1 „ 71
Triplets	1	1	2	1 „ 715
Placenta Prævia	1	5	6	1 „ 235
Puerperal Fever	7	5	12	1 „ 119
P. P. Hæmorrhage	5	22	27	1 „ 53
Retained Placenta—				
Morbid	5	16	21	1 „ 68
Inertia	3	15	18	1 „ 79
Irregular Contraction	—	2	2	1 „ 715
Accidental Hæmorrhage	1	3	4	1 „ 357
Convulsions	1	3	4	1 „ 357
Puerperal Mania	1	—	1	1 „ 1,430
Operations—				
Forceps used	87	75	162	1 „ 9
Long Forceps	22	25	47	1 „ 30¾
Short Forceps	65	50	115	1 „ 12½
Version	—	5	5	1 „ 286
Craniotomy	1	—	1	1 „ 1,430
Vectis	1	1	2	1 „ 715

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Du processus morbide du Choléra Asiatique, de sa période de mort apparent, et de la loi mathématique qui le régit. Mémoire du Docteur Philippe Pacini. Traduit par le Docteur Bos, sur le Seconde édition, revue et augmentée par l'auteur. Marseille. 1881. 8vo. Pp. 119.

This memoir, by the celebrated discoverer of the Pacinian corpuscles, will be read with interest, not only on account of the ingenuity of the views put forward in it, and of the arguments adduced in their support, but in consequence of the animated and agreeable style in which it is written.

The author derives all the symptoms of cholera from the loss of water which the blood sustains through the intestinal flux. The blood, having undergone an increase of density and a diminution of volume, circulates only with great difficulty, because not only is the friction among the particles of the fluid increased, but a larger proportion than before of the blood is now in contact with the vascular walls. This stoppage of circulation causes the algide period and the period of apparent death.

The loss of water by the intestine is due to the action of a living contagium, a *microbe cholérigene*. This is an *animal* contagium which limits its destructive action to the most superficial parts of the intestinal mucosa, commencing at its epithelium, and, like the itch insect, acts on the surface only, without producing any infection of the blood. In consequence of the destruction and desquamation of the epithelium the surface of the intestine becomes a discharging instead of an absorbing surface, and the liquid which is discharged is none other than lymph (!), which in place of entering the lymphatic vessels passes off by the intestine.

During cholera epidemics almost every one has the contagium in his intestine, but it does not always produce such destruction as to cause actual cholera, but only choleraic diarrhœa. In such cases, however, the microbe may be passed and the person, without having himself suffered from cholera, may become a source of infection to

others. The spontaneous stoppage of the choleraic flux occurs when the blood-vessels of the intestine become obstructed by the inspissated blood and blood corpuscles; then, the discharge having ceased, reaction may occur by the absorption of water from the tissues by the blood. The author supposes that the truth of his theory is strikingly shown by the good, although only temporary, effect of injections of saline solutions into the veins. The rapid disappearance of all the bad symptoms shows that these are due to the want of water, and their rapid recurrence shows the uselessness of giving water to the blood when the discharge of this by the intestine has not been previously checked. This treatment is said to be like pouring wine into a leaky barrel without first having stopped the holes. The treatment recommended consists in astringents, a solution of carbolic acid (1 in 500), cold to the abdomen, perfect rest, and the avoidance of friction and everything which can hasten the blood flow and prevent the obstruction of the vessels on the surface of transudation. It is only in the stage of apparent death that venous injections may be used, and then only because the patient is unable to swallow.

In the concluding chapter is set forward the mathematical law which governs the morbid process of Asiatic cholera. This mathematical demonstration does not admit of analysis, and cannot, consequently, be reproduced here.

Even from the very imperfect sketch which we have given of the theory maintained by Professor Pacini it will be seen that much of it will not bear criticism in accordance with our present physiological and pathological ideas. That in the main the theory is right, in so far as the symptoms are due to the inspissation of the blood, we have no doubt; but that the discharge from the intestine is preceded or caused by desquamation of epithelium is contrary to the best pathological evidence, while the statement that the fluid of the evacuations is simply lymph is so evidently false as to require no refutation. The author and his translator see, however, in the opposition which the theory has met, one of the best evidences of its truth. Dr. Bos says in his preface that the theory is too old to be fashionable—"Elle a, par-dessus tout, le tort d'être trop simple et de montrer, par sa simplicité lumineuse, l'inanité d'autres théories plus compliquées, plus névropathiques, plus fantastico-pathologiques, et qui ont l'avantage sur elle de l'obscurité et du galimatias, attributs qui l'on prend quelquefois pour la profondeur."

A Second Contribution to the Study of Localised Cerebral Lesions.

By E. C. SEGUIN, M.D.

THIS paper is reprinted from the eighth volume of the *Journal of Nervous and Mental Disease*, and forms a continuation of the author's first contribution to the localisation of cerebral lesions, which was noticed in the number of the *Dublin Journal of Medical Science* for December, 1881.

In the present contribution the details of symptoms and of pathological changes in the brains of five cases are recorded; two of these have not been published before. The first three cases were characterised by unilateral spasm, with subsequent paralysis of the parts at first convulsed. In each case a tumour was discovered in the opposite side of the brain, and situated in one case in the ascending frontal gyrus, in the second in the paracentral lobule and adjacent parts. In the first case the symptoms were most marked in the arm; in the second they affected both arm and leg, but chiefly the latter. In the third case the symptoms began in the leg and extended to other parts on the same side. The lesion involved the upper part of the two ascending convolutions and posterior part of the superior frontal. The fourth case is one in which the paralytic symptoms were slight, the chief interest lying in a peculiar form of aphasia, the manifestations of which are recorded at great length, and for the details of which we must refer to the original. The *post mortem* examination revealed extensive arteritis of the vessels of the brain and a softened patch on the left side, involving the whole of the inferior parietal lobule with the first tier of temporal gyri. This lesion lay outside the motor area, and as regards motor localisation the case is of importance negatively. The last case has a similar importance, since in it a large abscess in the frontal lobe ran its course without motor symptoms and, notwithstanding the enormously increased intracranial pressure, without optic neuritis.

We reproduce the author's conclusions, drawn from twelve carefully observed cases, which he has already published:—

1. The motor area of the cerebral cortex and allied white substance extends anteriorly as far as the lower half of the second and first frontal gyri, and posteriorly as far as the anterior part of the interparietal fissure.

2. The region lying between the limits indicated above, the middle regions of the hemisphere, on its convexity and (to a

great extent) on its median surface, including the posterior parts of the first and second, the whole of the third frontal gyri, the whole of the ascending frontal and ascending parietal gyri, with their terminations in the longitudinal fissure, known as the paracentral lobule, with probably the upper parietal lobe — all these cortical parts, with their associated segments or fasciculi of white matter, have strong motor functions, being in direct relation with the muscles of the face, tongue, arm, and leg.

(*a*). The lower part of the third frontal gyrus is intimately connected with the organs of speech. (*b*). The middle parts of the ascending frontal and ascending parietal gyri are directly connected with the arm of the opposite side. (*c*). The upper or posterior part of the ascending frontal and ascending parietal gyri and the paracentral lobule (also the upper parietal lobule [?]) are directly connected with the lower and upper extremities of the opposite side, and perhaps more closely with the leg.

The author cannot as yet offer any case bearing on the question of the location of the facial and ocular centres.

On Concussion of the Spine, Nervous Shock, and other Obscure Injuries of the Nervous System in their Clinical and Medico-legal Aspects. By John Eric Erichsen, F.R.S., &c. London: Longmans, Green, & Co. 1882. 8vo. Pp. 344.

In the number of this Journal for October, 1875 (Vol. LX., page 306), we reviewed the first edition of this valuable handbook on a subject of the utmost importance. The favourable opinion we then formed of the work has been confirmed on reading the present edition. Independently of the interest it possesses for those concerned in cases of "railway medicine" or "surgery," it will be studied with benefit by those who have to do with the injuries of the spine and spinal cord, which occur in the ordinary accidents of civil life—in falls out hunting, in the gymnasium, or in carriage accidents. The present work is an expanded and more fully developed form of one published in 1866, and now long out of print. It deals with a class of injuries which often tax to the very utmost the diagnostic skill of physician or surgeon, and in which there is often a great disproportion between the apparent injury and the real damage. This book is of particular value in reference to railway accidents, because all will admit that in no ordinary accidents can the shock, physical and mental, be so great

as in those that occur on railways. The chapter on the Medico-legal Aspects of Concussion of the Spine is deserving of attentive study. There is no subject in forensic medicine more important, and few more difficult, than that which relates to the correct estimate of the nature, the extent, and the probable consequences of an injury of the nervous system sustained in a railway collision. The various subjects in this work have been considered rather from a purely clinical than from a physiological or pathological point of view, but they are treated with all the ability and luminosity which the profession would expect from the talent and experience of the distinguished author.

An Index of Surgery. By C. B. KEETLEY, F.R.C.S. London: Smith, Elder, & Co. 1881. Pp. 420.

WE have so frequently called attention to the pernicious effect of so-called "Aids," and similar condensed Handbooks, specially designed to assist students in passing their examinations, that we cannot conscientiously praise the work before us.

It purposes to be "a short book . . . containing the main facts and theories of surgery put concisely, classified and arranged in due order, and without superfluous explanation." It is, in fact, a carefully prepared note-book. The great benefit to be derived from note-books is in the making of them. This teaches the student far more than even the committal to memory of such a note-book as Mr. Keetley's could ever hope to do. No doubt the author does not intend his book to supersede the systematic perusal of works on surgery. He hopes to supply the student who has been studying surgery in a legitimate way with a short book "to give form to any knowledge which then remained nebulous in his mind." But we maintain that this is not the way that the majority of students would make use of it. Relying on the possession of such a "cram" book, they would postpone their reading till the near approach of the examination left no choice but to have recourse to the shortest means of acquiring a sufficient amount of knowledge to enable them to pass.

We have nothing to complain of in the manner in which Mr. Keetley has accomplished his task. This aid to the idler is well executed, the information is well condensed, and the alphabetical arrangement will render it easy of reference. Occasionally through the book we notice some points omitted, which we think

might well have found a place, whilst some important diseases are disposed of in a very cursory and insufficient manner. Under the head of Gastrostomy, for instance, general directions are given as to the best method of carrying out the operation:—"When quite certain of having got the right viscus, seize it with a catch forceps, if gastrostomy is to be performed. Two double ligatures from side to side through lips of wound and wall of stomach. *Open viscus.*—Pull ligature loops out of wound, and divide them." Such, however, is not the manner of proceeding recommended by the highest authorities. It is now generally conceded that the stomach should *not* be opened at the time of the first operation, but that when possible this should be postponed for two or three days, so as to allow time for the stomach to become intimately fixed in its new position. Again, so important a subject as Post-pharyngeal Abscess is dismissed with the following scanty note:—"*Cause.*—Often caries of cervical vertebra. Most dangerous to children, because then may not be diagnosed till it has produced suffocation. May open externally in neck. *Treatment.*—Puncture with an abscess knife having its blade, except near the point, protected by lint. Finger may be used as a director." Only one cause is suggested. The only danger alluded to is suffocation. There is no hint of pyæmia, hæmorrhage, or the consequences of the abscess burrowing. Many similar omissions occur through the book, which we feel sure a new edition will rectify. Still these examples will show how dangerous to the unread student a little knowledge gained from trusting to such works as the present one may prove to be.

Examination Questions on the Medical Sciences. Selected and arranged by James Greig Leask, M.B. London: Baillière, Tindall, & Cox. 1882. Med. 8vo. Pp. 113.

This is an admirable little volume, and will powerfully contribute to that most excellent habit on the part of the student—viz., testing his progress by self-examination. The questions pertain to Anatomy and Physiology, Botany and Medical Chemistry (which include Materia Medica), Hygiene, Medicine and Pathology, Surgery, Midwifery, Medical Jurisprudence, Physics, and Zoology. As the title implies, the questions are not wholly original, but are carefully culled from university calendars and army and other competitive examination papers. The questions are clearly and

concisely put and admirably arranged. We read them with interest, and now and then with a feeling of compunction at our shortcomings, combined with thankfulness that we were not under public examination in regard to some of them.

ST MARY'S HOSPITAL
OF RADFORD
LIBRARY

Experimental Researches into the Properties and Motions of Fluids, with Theoretical Deductions therefrom. By WILLIAM FORD STANLEY. London: E. & F. Spors. 1881.

LIKE all physical investigations the properties and motions of fluids are of interest to students of that fearfully and wonderfully complex system, the animal body. The investigations, however, contained in this volume are not in a form or of a nature directly applicable to this study except in respect of one curious analogy the author points out, and to which attention will be called presently. It is a great pity that all professed students are not as enthusiastic experimenters and observers as Mr. Stanley, and if only for the sake of seeing how laborious one should be it would be worth while looking through this work. It bristles with observation and experiment, but it unfortunately bristles, too, with theory and supposed principles, which confirm strongly Mr. Stanley's opinion, as expressed in his preface, that the experimental parts of his work are more important than the speculative parts. His theory is everywhere what may be called non-quantitative. He avoids the danger of neglecting complicated cases—a real danger in purely mathematical investigations—by inventing principles almost *ad infinitum* to explain his observations, but he thereby runs very close to the other danger of using words without any definite meaning.

The curious analogy he points out in Chapter IX. is between the way in which one liquid flowing into another divides itself into branches and the branching of the arteries, veins, &c. When one liquid flows slowly into another his experiments show that it has a tendency to bifurcation. The inflowing liquid splits up into two streams first, and each of these into two others, until the whole divides up into an immense number of branches, somewhat like arteries. Mr. Stanley thinks that some similar condition may occur in the animal body, and that the arteries, &c., may originate in some similar manner. There is an undoubted similarity between the shapes produced, and a certain similarity between the conditions under which they are produced, so that it may very well be

worth while for those who have an opportunity of doing so to investigate Mr. Stanley's speculations. He further points out a still more distant similarity between the little vortex whirls that exist at the ends of the streamlets of flow of the entering liquid and the terminations of sweat glands, lymphatic nerve endings (Pacinian bodies), and also with the Malpighian bodies. These analogies are deserving of attention, though hardly deserving to be called more than superficial similarities. His discussion of aerial and oceanic circulation is in many respects very interesting, but would be much more valuable if it contained more accurate observations and fewer purely theoretical statements. Mr. Stanley's experiments, from the capillary surface reflections to the splashing of a drop falling into water, are everywhere most interesting and suggestive, but his theoretical principles, such as "expansion by heat forces," "gelatinity," or his favourite one of "rolling contact," to dispense with the necessity for supposing slipping or gliding motions in a fluid, are certainly not calculated to make the subject intelligible and simple, which is the great object of the science of nature.

Diet and Regimen in Sickness and Health, and on the Interpendence and Prevention of Diseases and the Diminution of their Fatality. By Horace Dobell, M.D. Seventh Edition, revised and enlarged. London: H. K. Lewis, Gower-street, W.C. 1882. Medium 8vo. Pp. 327.

This work is addressed more to the educated public than to the medical profession, and is a sample of that type of semi-medical literature which is the natural outcome of the great and increasing public interest taken in all matters relating to public health and to the prevention of disease. In Dr. Dobell's book the educated physician will find little to take exception to, but at the same time will discover hardly anything that is not the very alphabet of hygiene. We must, however, take issue with him in his approval (p. 33) of indulging in sleep after meals; while, on the other hand, his censure upon that latest fashionable dyspepsia-producer, "afternoon tea," meets our entire approval.

He discourses upon clothing, warming, sleep, and diet, and explains the safest way of "getting thin;" immediately after which, with laudable impartiality, he advises us "how to get fat;"

and in this regard clearly explains on physiological principles the well-known fattening tendency of quantities of dilute alcohol.

There are some chapters and sections contributed by Dr. Dobell's friends which might with advantage be published in a separate form. We would instance the excellent little essay on "House Drainage" by G. C. Pritchett, F.S.A., the well-known architect; also the chapter on the "Diet and Regimen of Children" by Dr. Sansom, Physician to the North-Eastern Hospital for Children. This chapter gives the most minute details upon the feeding and general management of infants, and might with advantage be placed in the hands of every young mother. There are very good popular chapters upon the various foods for the healthy, upon invalid foods, and on wines and spirits. The most interesting chapter to the medical profession is that on "Food, Heat, and Motion" (pp. 52 to 61). This is really well done, and explains a rather abstruse subject in a familiar, intelligible way. The treatise is evidently mainly intended to contribute to public sanitary education, and this purpose it will fulfil to a considerable extent.

Tables of the Average Weights of the Human Body and Brain. Compiled and Abridged from Dr. Boyd's Researches. London: J. and A. Churchill. 1881.

We have received from Messrs. Churchill, of London, two elaborate Tables, neatly mounted and glazed, of the average weights of the human body and brain, and of several of the internal organs, in both sexes.

The tables are intended to be useful for reference in the *post mortem* room and in medico-legal investigations. The first gives information as to the average weights of the body, of the cerebral organs, including the cerebrum, cerebellum, pons Varolii and medulla oblongata, and the encephalon generally; of the heart, liver, spleen, kidneys, and thymus gland, at eighteen periods of life in males and females. This table was compiled and abridged from Dr. Boyd's researches in upwards of 2,000 *post mortem* examinations made at the St. Marylebone Infirmary, communicated to the Royal Society by the late Dr. Sharpey, and published in the *Philosophical Transactions* for 1861. The weights are given in pounds, ounces, and decimal parts of an ounce avoirdupois. It is a pity that the

equivalent weights according to the metric system are not included in this otherwise very perfect table.

Table II. gives similar information in a more extended form at decennial periods of life in the insane, the forms of insanity in each sex being also specified. It is compiled from Dr. Boyd's researches in 528 *post mortem* examinations, communicated to the Royal Society by the late Dr. Sharpey, and published in the same volume of the *Philosophical Transactions* (1861), and in 446 subsequent *post mortem* examinations made by himself at the Somerset County Lunatic Asylum from January, 1861, to July, 1868. The total number of cases on which the table is based is, therefore, 974, including 558 males and 416 females. Among the interesting results brought out by the tables are the facts that the weight of the body is greater in the insane, and that the left cerebral hemisphere is heavier than the right.

NEW METHOD OF EMBALMING BODIES AND PRESERVING TISSUES.

Dr. Virodtxeff (*Balsamirovanie*, pp. xi, 164, St. Petersburgh, 1881) recommends the following preparation as an efficient agent in the embalming of bodies and the preservation of tissues:—Thymol, 5 parts; alcohol, 45 parts; glycerine, 2,160 parts; water, 1,081 parts. It is cheap, innocuous, free from unpleasant odour, possesses the property of keeping the body soft, elastic, fresh, and life-like, and does not ruin instruments. Thymol is selected as being superior to other antiseptics, and glycerine is added, both on account of its own preservative qualities and to retard the evaporation of the fluid. For the preparation of tissues the same solution is employed. If the cadaver be quite lean, or the tissues very delicate, equal parts of water and glycerine (1,620 of each) are combined with the above quantities of thymol and alcohol. To inject a body, half its weight of the fluid is necessary. A properly embalmed cadaver may be preserved indefinitely under ordinary circumstances, gradually shrinking and mummifying without putrefaction. Specimens are either to be injected with or macerated in this fluid. Maceration must not be too prolonged—the appearance of the specimen should act as a guide. The part, after having been thoroughly cleansed with water and prepared, may then be exposed for months to the air without losing its consistency, form, and colour. Permanent specimens may be enclosed in a hermetically sealed glass vessel containing a little of the same solution. Dr. Peabody has used this preserving fluid with excellent results in the New York Hospital Museum.—*N. Y. Med. Record.*

PART III.

HALF-YEARLY REPORTS.

REPORT ON NERVOUS AND MENTAL DISEASE.

By Ringrose Atkins, M.A., M.D.; Medical Superintendent, District Lunatic Asylum, Waterford.

[*Concluded from page 429.*]

III. NEURO-PATHOLOGY AND PATHOLOGICAL ANATOMY.

The Effects of Galvanism on the Brains of Hypnotised Persons.—M. Charcot has recently made a series of interesting communications to the Soc. de Biologie concerning the phenomena resulting from the application of a galvanic current to the cranium during the lethargic period of hypnotism observed in hysterical patients. During the period of hypnotic sleep of hysterical patients, which M. Charcot calls "provoked hypnotic lethargy," there exists a state of neurotic superexcitability characterised by an aptitude of the nerves and muscles to act under the influence of a mechanical stimulus. M. Charcot's most recent experiments show that this superexcitability resides not only in the muscles and nerves, but in the motor regions of the cerebral centre. Thus the galvanic current acting on one side of the cranium produces sudden muscular starts in the face and limbs of the opposite side, while the same current does not give rise to any contractions when the patient is awake. An hysterical patient thrown into a state of lethargy by the usual means falls into a state of neuro-muscular superexcitability. If one of the poles (the positive) be placed on the frontal protuberance, or two centimetres above the pinna of the ear, and the other pole be placed on the median line of the sternum, when the current is interrupted a violent start is observed on the opposite side to that on which the pole is applied. The commissure of the lips is drawn outwards, the arm and leg are suddenly raised upwards. These movements take place in a single region, or in all three at once on whatever side of the cranium the current is applied. As the movements of the face might be attributed to the

direct influence of the current on the facial muscles, the experiment was modified in the following manner:—The poles were both placed on the same side of the cranium, one a little above the pinna of the ear, or four or five centimetres behind and above the mastoid process; the other on the apex three centimetres from the median line at the extremity of a vertical line passing by the meatus auditorius externus; this region corresponds to the upper part of the cerebral motor region. The results were similar to those yielded by the preceding experiment. Negative results attend these experiments repeated when the patient is awake. It may be presumed that during the hypnotic lethargy there is a special excitability of certain regions of the brain. How the current passes through the bones of the cranium is a question which M. Charcot does not attempt to solve at present. The important fact is that the cerebral motor regions during hysterical lethargy are sensible to the influence of a galvanic current. At a more recent meeting M. Charcot communicated fresh details and modified conclusions which he had previously suggested rather than arrived at. M. Charcot insists on the impossibility of adopting for the moment other than temporary conclusions. Up to the present time M. Charcot has studied ten cases of hysterical affections; these he divides into three groups. The first group consists of four patients. Galvanising the half of the cranium, as previously described, when these patients were in a state of lethargy accompanied by neuro-muscular excitability, always provoked muscular movements on the opposite side of the body—face, arm, and leg. These movements were less sudden than they usually are when the current is interrupted. The same experiment repeated when the patients were awake gave negative results. Wishing to determine whether the galvanic stimulus is transmitted through the integuments, the cranial bones, and the dura mater, finally reaching the brain, M. Charcot repeated with some modifications Prof. Erb's experiment, which gave affirmative results. Two metallic rods being placed in communication with the cerebral matter and a telephone, a slight crackling noise is heard when the galvanic current is interrupted. If the electrodes be applied to the shoulder, the telephone is silent when the current is interrupted. In these researches the galvanoscopic frog's foot gives the same results. M. Charcot considered that these experiments support the opinion that currents of a certain intensity can reach the brain; but he would not adopt any conclusion, but left the question open to dis-

cussion by his colleagues. M. Charcot repeated his experiments on four other patients constituting the second group. In this group of patients the same patients did not always yield the same result when an identical experiment was repeated. Invariably, however, the movements of the limbs and face occurred when the current applied to one side of the cranium was interrupted, and with a marked predominence on the same side of the body. Three of this group when awake had sudden movements when under galvanic cerebral excitation; the remaining patient presented these symptoms only when hypnotised.

In the third group two patients remained perfectly quiet during the cerebral galvanisation; one of these was exempt from neuro-muscular excitability, and another presented it to a limited extent. M. Charcot communicates these details without drawing any conclusion. He offers them to the criticism of his colleagues, suggesting only that the excitability of the dura mater may perhaps give some clue to a solution. His suggestion is based on the results of the well-known experiments of Marshall Hall, Brown-Séquard, Bochefontaine, and Duret.—(*Brit. Med. Journ.*)

Cerebral Localisation and Hallucinations.—Prof. Tamburini, of Reggio Emilia, read in the Section of Mental Diseases at the Congress an interesting paper on the "Relation of Hallucinations as a symptom of Disease to the question of the Localisation of the Cerebral Functions." He stated that the first discovery of a sensory centre (that of sight) in the cortex was due to Panizzi in 1856, but the full development of the discovery is due to Prof. Ferrier. He reviewed the various theories which would ascribe hallucinations to disorder of the peripheral organs, of the optic thalamus, and of the sensory cortical centres, concluding that the latter is the only view consistent with the present state of physiology. He proceeded to support this by relating three cases in which there had been persistent auditory hallucinations during life, and after death Ferrier's auditory centres were found diseased. He brought the subject forward in order to support Ferrier's teaching and to urge others to further inquiry. Prof. Ferrier, in speaking on the paper, expressed the belief that hallucinations were due to morbid excitement of these sensory centres in the same way as convulsions are produced by excitement of the motor centres. These views of Prof. Tamburini are but the reiteration of his opinions previously expressed in a lengthened article in the *Revista Sperimentale* (*vide* Report in this Journal for Oct., 1881), and, it will

be remarked, are in opposition to those of Hammond and Luys (same Report), who localise the morbid conditions giving rise to hallucinations in the optic thalamus and its neighbourhood. Thus Tamburini would have it that impressions passing up from the periphery through *intact central sensory ganglia* (optic thalamus &c.) are received by *diseased cortical sensory centres*, and consequently varied hallucinations follow; whereas Luys and Hammond consider that impressions pass up through *diseased central sensory ganglia*, and the impressions thus rendered morbid are received and translated as such in *intact cortical sensory centres*.

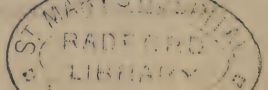
As a contribution to this interesting question, Dr. Mickle publishes, in the *Journal of Ment. Science* for Oct., 1881, and Jan., 1882, an important paper containing his views deduced from a large number of cases of general paralysis minutely observed by him, in which hallucinations, visual and auditory, were notable landmarks in the clinical picture. Dr. Mickle's opinions are much wider than those of Luys and Tamburini; he wishes to be understood as not taking any limited view of the production of hallucinations. So far from this, he says, rather let it be granted that hallucination may take its starting-point in a morbid impression upon, or a morbid condition of, any part of the sensorial apparatus. The morbid condition forming the starting-point of hallucination may have its seat in the recipient peripheral expansions of the sensory nervous mechanisms or in the conducting fibres passing thence centripetally towards the sensory basal ganglia, and sometimes renewed or reinforced on the way by intervening bulbar, pontine, or more removed quadrigeminal centres; or again, the morbid focus may be in these sensory ganglia themselves, situate at the brain base, somewhat simple and elementary in endowment, and making early appearance in the order of evolution; or again, the morbid condition may be in the nervous tissue forming the paths of sensory vibrations between these ganglia and the higher perceptive cortical sensory centres of the cerebral hemispheres; or finally it may be in these very cortical centres themselves. He adds, however, that these cortical sensory centres appear to be of all the most important in the genesis of hallucination. Without their participation in derangement it is difficult to apprehend how hallucinations can exist, at least in its higher and more developed forms. In hallucination there is evidence of pathological activity in the supreme centres concerned with the coordination of sensory impressions into complex perceptions and of the arousing into present conscious-

ness of the results of the highest mental integrations—of the treasures of past experience—with the acquisition of which the highest mental faculties are obviously concerned. If the cerebral cortex minister to the psychical powers it must be deranged when true systematised hallucination exists. Thus the weight of his opinion is thrown with the views expressed by Tamburini and Ferrier. Baillarger, followed by Regis (*L'Encephale*, No. I.) on the opposite hand, conclude from a study of certain cases under their observation that for the production of hallucination both a sensorial and a psychical element are necessary. It would appear to me that without psychical involvement no true hallucination can be produced. Aberrations of sight and hearing may occur from irritation or actual disease of the ocular or auditory peripheral organs, but the impressions thus originated passing through normal, basal, and central ganglia, and being received by intact cortical centres, the conception of their purely subjective and unreal character is at once formed, whereas if the paths of transmission and the centres for reinforcement and reception be involved in the morbid condition, the resulting concept is of an entirely different character, its objectiveness and reality being recognised with greater or less power in proportion to the intensity of the irritation. But at the same time a diseased condition of the peripheral sense organs is by no means necessary for the production of true hallucination, as a normal wave of irritation may be transmitted along diseased tracts and received by diseased centres, and the resulting concept will be morbid.

Victor Kandinsky, a physician in Moscow, contributes to the *Archiv f. Psychiatrie* (XI. Band, 2 Heft) an article on the Nature and Origin of Hallucinations, based on a study of his own case, he having had the misfortune to suffer from mental derangement with hallucinations for two years. His conclusions are as follows:—

1. Hallucinations are never the expression of an aroused activity of the psychic sphere, but, on the contrary, are indications of the exhaustion of the same—that is, of the cortex of the anterior part of the brain. The period of intellectual delirium does not coincide with that of hallucinations. With the arousal of the psychic activity the hallucinations become less real, and disappear. The ability of the patient during convalescence to engage in intellectual work contributes largely to the suppression of the hallucinations.

2. The mechanism and origin of hypnotic hallucinations are identical with those of insane hallucinations.



3. Hallucinations are distinguishable from phantasy and recollection images, however lifelike these may be, by their peculiar objective reality.

4. Hallucinations dependent upon irritation of the nerves of the organs of sense are characterised by their simplicity; peripheral visual hallucinations frequently possess, in addition, the peculiarity of moving in series, and of following the movements of the eyes.

5. The influence of recollection, and of the tenor of intellectual delirium on hallucinations, is extremely slight. Indeed in delirious or insane persons the images of the fancy are not always translated into hallucinations.

Kandinsky alludes to Meynert's theory of hallucinations—viz., that they depend upon the relations of the excitation of the cortex of the anterior region of the brain to those of the infra-cortical centres, and says it is difficult for him to accept the notion that very complicated and systematic hallucination images, consisting of numerous regularly coordinated parts, and perceived by consciousness in perfected shape (for example, a landscape with water, sky, clouds, trees, houses, &c., all in their natural colours, shades, and perspective), can originate anywhere else than in the cortical cells. He then refers to the cortical sensory centres of Ferrier and Munk, and says that, besides consciousness and abstract thought, the function of the fore-brain includes the regulation and inhibition of the excitations coming from other portions of the cortex. The power of imagery plays a great part in our mental activities, and the function of the cortex of the fore-brain is always accompanied with activity of the cortical sensory regions (for example, the visual or auditory centres of Ferrier). If the cortical visual centre is excited, not from the fore-brain, but from a corresponding infra-cortical centre (such as the corpora quadrigemina), then the result of its activity is not a mere imaginary object, but one that assumes an objective character—that is, there is a genuine act of vision, or, in the lack of an external impression, a visual hallucination. If the control of the cortical sensory centres by the cortex of the fore-brain is prevented, then the spontaneous excitations that go to them from the corresponding infra-cortical centres (resulting from variations of the circulation or nutrition) give rise to the occurrence of hallucinations. The conditions favourable to the latter are diminution of the activity of the fore-brain, together with an excited condition of the sensory centres, cortical as well as infra-cortical. This excitation may pass from the nerves to the infra-

cortical centres—hence hyperæsthesia of the sensory organs is a common accompaniment of hallucinations. But, on the other hand, we can in no case admit a centrifugal (from higher to lower centres) transmission of the excitation.

On Syphilis as a Cause of Locomotor Ataxia.—Prof. Erb, of Leipzig, introduced this question in the Section of Medicine at the Congress. The evidence he adduced was entirely statistical. Having carefully examined the histories of 100 typical cases of ataxia, he found that—

Cases *without* previous infection amounted to	12	per cent.
Cases with previous infection - -	88	,,
(Amongst them with secondary syphilis) -	59	,,
And with chancre without secondary syphilis	29	,,

Since these cases were examined he observed 13 further cases, and amongst them there was but 1 without previous infection; of the remaining 12, 8 have had secondary syphilis, 4 only a chancre. The proportion in these cases is therefore still somewhat more unfavourable.

With regard to the time of appearance of the first symptoms of tabes after infection, Erb's cases show that by far the most occur from the 5th to the 15th year after infection; a considerable fraction, however, occurs 3 to 5 years after infection.

In order to control these statistics, Erb made a counterproof, extending over all male adults over twenty-five years old of his clientéle who do *not* suffer from tabes, and not directly from syphilis; 500 persons were carefully examined with regard to this question, and there were found—

77 per cent. who were never infected.
12 ,, who had formerly secondary syphilis.
11 ,, who had only a chancre.

Prof. Erb says that the simple confrontation of these facts is forcible enough, and convincing for everyone who does not shut his eyes purposely. The only possible logical conclusion from these facts is *that there must be a certain ætiological connexion between syphilis and tabes.* The remark which has been made repeatedly before this—viz., that it is just the milder and apparently harmless syphilitic infections which are followed later on by severe syphilis of the nerves, intrudes itself also with regard to tabes, according to Erb's observations. The author's experiences push him more and more towards the unitarian view of syphilis. At any rate the *absence* of most or even of *all* the so-called secondary manifestations

of syphilis is by no means a proof for the *non-syphilitic* nature of the previous chancre. Only after the decision of the question in the unitarian sense would we be entitled to state that tabes in 90 per cent. *of all cases is occasioned by syphilis as one of the ætiological factors.* An animated discussion followed the reading of this paper, in which Profs. Lancereaux and Gairdner, Sir Wm. Gull, Drs. Banks, Althaus, Neftel, and others took part, and for the most part disagreed with the conclusion arrived at by Erb, either from the insufficiency of the purely statistical method of inquiry, or from the negative results of their own investigations and experience.

The Pathology of Locomotor Ataxy.—Prof. A. Pierret, of Lyons, contributed to the Congress a paper on this well-worn theme. He first drew attention to the constitution of the sensory nervous system in man, in the spinal cord, the medulla oblongata, the pons Varolii, and the base of the brain, and pointed out the relations which exist between the sensory, motor, and vasomotor tracts. He then proceeded to show that, parallel to the systematic forms of myelitis which are localised in the motor tract (lateral sclerosis), there exists also a systematic inflammation of the sensory tract, and from this arises tabes.

This disease is represented anatomically by inflammatory alterations which have their seat principally at two points:—

1. In the peripheral receptive organs (retina, auditory nerve).

2. In the columns and sensory ganglia of primary and secondary reflex action, which are formed through the whole extent of the cerebro-spinal system. The morbid changes usually begin at separate foci.

The symptoms may be summed up in the following propositions:—

(*a*). Those phenomena, which are truly diagnostic, and without which the affection could not be recognised, consist of various disturbances of general or special sensibility. The sphere of ideation may be disturbed in a special manner.

(*b*). In consequence of the intimate relations which unite the motor and sensitive tracts, a whole series of disturbances of motor function are soon seen to be mingled with the disturbances of sensation. These are instances of total paralysis, of true hemiplegia, of paralysis of some groups of muscles, of paresis, and still more often of simple motor insufficiency. Various disturbances are seen in the muscles of organic life and of relation. Spasmodic pheno-

mena are also observed, though less frequently, along with these failures of muscular power. These are connected with a sclerosis which is propagated from the lateral columns—which has been described and explained by M. Pierret since 1870 (*Archives de Physiologie*, p. 616). The irregularity of the movements of ataxic patients is due to these various disorders of motor power.

Finally, the existence of a complete vasomotor system lying between the motor and sensitive tracts, and passing from the spinal cord to the medulla oblongata, through the medium of the posterior pyramids (fasciculi graciles), explains all the phenomena which are observed in the circulatory system.

On Primary Chronic Disease of the Organs of Voluntary Motion.—Dr. Paul Möbius, of Leipzig, has recently published a *brochure* on this subject, in which he seeks to simplify and reconcile, so to speak, the diverse opinions now held by different schools of pathologists. The organs of voluntary motion taken from above downwards include—(*a*) the central convolutions and paracentral lobule, the subjacent medullary matter, the motor portion of the corona radiata, internal capsule, pes pedunculi and pons; (*b*) the pyramids of the medulla oblongata, and the pyramidal strands of the spinal cord; (*c*) the ganglionic cells of the anterior cornua of the spinal cord, homologous parts of the medulla; (*d*) the anterior root fibres and the motor nerves; and (*e*) the voluntary muscles. Dr. Möbius considers that the whole system may become diseased, but that in general only a portion of it is affected; that the lower portion of the system suffers invariably; and that the limits of the pathological process vary as we proceed upwards in the motor zone. Thus the muscles are always diseased: and if no other part suffer, we have to do with simple progressive muscular atrophy. Such are the cases which have been recorded by Friedreich, Lichtheim, and others, in which the nervous system was found healthy throughout its extent; and those of hereditary atrophy with or without lipomatosis (pseudo-hypertrophy of the muscles) which have been described by Meryon, Duchenne, Charcot, and others. Whether there are cases in which the peripheral nerves alone participate in the affection, as Cruveilhier asserted, is still doubtful. The next class consists of those cases in which the muscles, peripheral nerves, and the anterior horns of the gray matter are degenerated, as described by Luys, Charcot, Hayem, and others, and in which we now see the type of progressive muscular atrophy. This class comprises three different varieties, according to the localisation of the pathological lesion, viz.:—The

ordinary special form which has a sub-variety, where the nerves remain intact; the bulbar or medullary form (progressive bulbar paralysis); and, finally, the bulbo-spinal form which may be complicated with degeneration of the pyramidal strands, as seen by Leyden, or exist without it, as in the cases of Duval and Raymond. Generally the disease is arrested in the pons Varolii; in a few cases, however, the external segment of the middle third of the pes pedunculi has been found affected; of the internal capsule nothing has been noticed, but in a case recorded by Kahler and Pick the central convolutions were likewise wasted, so that the whole system of the pyramidal strands has been found affected.

In all these forms of disease there are simple atony and wasting, but progressive muscular atrophy may be combined with spastic phenomena, assuming a spinal or bulbo-spinal form, the latter being amyotrophic lateral sclerosis. Dr. Möbius doubts the existence of primary lateral sclerosis without affection of the gray matter, as this would be in contradiction with the principle that in all primary diseases of the motor sphere the lowest portion—viz., the muscles, is invariably found affected. According to him the lesions in lateral sclerosis, bulbar paralysis, and progressive muscular atrophy, are identical, consisting of parenchymatous inflammation or sclerosis; the differences which have been noticed being not separate processes but only varieties caused, most probably, by a peculiar predisposition of certain parts, and also by the duration and intensity of the pathological action.—(*Brit. Med. Journal.*)

The Pathological Anatomy of Primary Lateral Sclerosis.—Dr. Dreschfeld, of Manchester, presented to the Section of Pathology at the Congress a series of sections of the spinal cord from a patient who during life showed the typical symptoms of the "tabes dorsal spasmodique" of Charcot. The case had been under the care of Dr. Morgan, and the symptoms during life were principally—gradually progressive paralysis of the lower extremities, with marked contractions, increased tendon reflexes of both upper and lower extremities, absence of any sensory or trophic disturbances, or of any bladder troubles or brain symptoms. On *post mortem* examination the brain and medulla were found intact, the spinal cord showed to the naked eye nothing but slight softening in the lower dorsal region. The microscopic examination of the several parts showed—(1) In the medulla slight increase of the neuroglia in the anterior pyramids. (2) In the cervical region of the cord sclerosis of the anterior and lateral pyramidal tracts. (3) In the

dorsal region the same lesions, with atrophy of some of the ganglion cells in the anterior horns. (4) In the lumbar regions sclerosis of the lateral tracts and atrophy of the ganglion cells of the anterior horns. The rest of the several tracts of the spinal cord was healthy. The atrophy of the ganglion cells differed both in its nature and in its distribution amongst the several groups from the atrophy seen in primary poliomyelitis, and can only be looked upon as secondary to the affection in the lateral tracts. The case is thus the first on record in which the *post mortem* lesions corresponded to the theoretical considerations of Charcot and Erb, the affection being one gradually progressive from below upwards, and consisting of a sclerosis of the pyramidal tracts; hence Dr. Dreschfeld proposes to call the disease "Sclerosis of the Pyramidal Tracts."

In the discussion which ensued, Prof. Erb considered the specimens perfect examples of sclerosis of the pyramidal tracts, and entirely agreed with Dr. Dreschfeld in looking on the atrophy of the ganglion cells as secondary to the sclerosis in the pyramidal tracts.

Fat Emboli amongst the acutely Insane. — Dr. M'Dowall has translated and published in the *Journal of Ment. Science* an interesting paper, by Prof. Jolly of Strassburg, on this subject. The author desires to call attention to the presence of fatty emboli blocking up the more minute pulmonary vessels as a little-known or sought-for cause of death following acute excitement, accompanied by rapidly forming bedsores, suppuration of the subcutaneous tissues, or other deep-seated trophic disturbances. He records at length a case (already published in a thesis by Flournoy) in which microscopic fat emboli were found blocking up the pulmonary arterioles in a very fat and muscular patient who died exhausted after acute excitement, during which she had inflicted numerous bruises on her body. It can scarcely be doubted, he says, that in this case the almost complete blocking of the majority of the smaller pulmonary vessels was the cause of death; and though the exhaustion and collapse may in part be attributed to the intense excitement, yet it is more probable that they were due to the increasing obstruction of the pulmonary vessels, in consequence of which the left ventricle was deprived of its blood. Several other cases are related where death ensued after acute excitement in which bedsores and subcutaneous suppuration occurred, or in which the cancellous tissue of the bones was converted into an

adipose material. In these fat emboli were found to a greater or less degree in the pulmonary arterioles; and the author, therefore, is of opinion that fat emboli can be there formed by absorption of the fat—(1) When in stout, full-bodied persons the subcutaneous adipose tissue is broken up by bruises extensive and severe, (2) when bedsores and suppuration of the subcutaneous tissue quickly follow on excitement, and (3) when the bones become diseased, so that the normal spongy structure disappears and is replaced by adipose material. Under these three conditions fat may be absorbed and emboli formed, which may be the sole or part cause of death, according as they block up a more or less extensive area of the pulmonary circulation, and so impede the vascular current through the lungs.

A Newly-described Brain Lesion in General Paralysis.—In the January (1882) number of the *Annales Méd. Psychol.* M. Baillarger publishes a short account of an interesting lesion which he has found in several cases of general paralysis, consisting in a complete separation of the cerebral cortex from the underlying white matter. As is now universally acknowledged, the localised adhesions of the membranes to the summits of the convolutions is the most constant gross lesion in this disease; the adhesions never extend into the sulci, and when the membrane is drawn away it brings with it portions of the cortex, leaving an irregular, ulcerated-looking patch to mark the situation and extent of the adhesion. This ulceration, produced by the removal of the cortex, glued, so to speak, to the membrane, never extends through its entire depth, and the surface is always rough and eroded looking. The lesion which M. Baillarger now describes, and which it appears Calmeil noticed in two cases, is entirely different to this, the entire cortex stripping readily from the white matter, as well from the bottoms of the sulci as from the summits of the convolutions, leaving the surface of the white matter smooth and firm, and this decortication may extend through an entire lobe. On examining the cortex so separated on its inner surface, it presents the appearance of the convolutions reversed, their summits representing the sulci and the latter the convolutions, so smooth is the line or surface of separation of the gray and white tissues. In one case where the separation was not quite complete, a distinct line of demarcation was observed, and immersion in water caused immediate decortication. M. Baillarger considers it difficult to say what may be the exact pathological process causing this lesion.

Porencephaly.—This term has been applied by Prof. Heschl, of Vienna, to certain gaps (*pori*) or defects in the contour of the convolutions of the brain, which he regarded as congenital. This condition has since been studied by Kundrat, of Graz, who has recently published a monograph on the subject. He has examined twelve cases coming under his own observation and collated the results in twenty-nine others elsewhere recorded. Kundrat considers that in some of these cases the defect has been congenital, while in others it has been brought about by a destructive pathological process. The defect or "gap" may extend from a slight pit or depression on or between the convolutions to a hollow extending into the ventricles. A characteristic peculiarity of the congenital cases is that the sulci in the neighbourhood all converge in the gap, thus appearing to radiate from it, as it were, and, further, the sides of the gap are formed by the gyri descending from the surface towards the depth of the cavity, and are covered by the pia mater, the arachnoid extending tightly across the gap. In the acquired cases, on the contrary, the cavity appears formed in the substance of the convolution, and its surface is destitute of pia matral covering. It seems probable that these defects must be set down to anæmic necrosis following on small hæmorrhages, and that they are formed in the same way as are serous cysts after apoplexies in later life. This is rendered likely from the fact that strands of nerve-tissue were observed to extend across the gaps in some cases, and that they are generally formed in the area of the middle cerebral artery, the area wherein hæmorrhages would be most likely to occur.

I may mention that in a case recorded by me last year in *Brain* bearing on cerebral localisation such a porencephalic defect, doubtless produced in the manner alluded to, occurring in a special region within the motor zone, was the principal lesion observed.

ST MARY'S HOSPITAL
RADFORD
LIBRARY

IV. NEURO-THERAPEUTICS.

Seguin on the use of Hyoscyamine.—Seguin, in the *Archives of Medicine*, April and June, 1881, arrives at the following conclusions regarding the therapeutics of hyoscyamine:—

1. Hyoscyamine acts as a mydriatic, but whether more fully or larger than atropia remains to be settled.

2. When given in small doses it reduces the cardiac pulsations, increases arterial tension, and checks the loss of body heat. It

also produces hallucinations and delirium. It may cause a fall of axillary temperature, and also produces a rash.

3. In large doses it immediately increases the pulse rate, produces a seeming paralysis or motor debility and sleep.

4. Hyoscyamine is indicated in mania, restlessness, delusions of persecution, dementia with agitation and destructiveness, epileptic mania, insomnia, rapid action of the heart, epilepsy (?), status epilepticus, chorea, paralysis agitans, hysterical spasms, tremor, neuralgia, rapid pulse, &c.

5. In mania and allied states it produces sleep as certainly or even more certainly than chloral, without any evil after-effect, unless it be an occasional gastric disorder.

6. In cases of delusion of persecution or suspicions it has produced an absolute cure.

7. In paralysis agitans it achieves what no other remedy ever has done—viz., arrests the movements for four hours or more without insensibility.

8. In the status epilepticus it shortens the attack materially—perhaps better than any other single remedy.

9. It is a diuretic of no mean power.

10. The curative power of hyoscyamine does not appear to be great. In some cases of insanity its use has been followed by recovery, but as a rule we must look upon it as a good narcotic, often speedier, more complete, and less objectionable than morphia and chloral hydrate. In spasmodic diseases we can speak of hyoscyamine only as an ameliorating agent or as a palliative.—(*Am. Journ. Nerv. and Ment. Dis.*)

These conclusions, definitely set forth, must be received with caution, as in this, as in the case of many other drugs, individual experience differs considerably as to its use.

A Contribution to the Study of Nerve Stretching in Tabes Dorsalis.—Prof. Westphal, in the *Berlin klin. Wochensch.*, 1881, reports the result of his microscopic examination of the spinal cord taken from a subject which was operated on by Dr. Langenbuch in 1879. The patient was supposed to be suffering from tabes dorsalis, and the sciatic nerve in both limbs was stretched, with the astonishing result of curing the ataxic symptoms, relieving the severe pains, and restoring the normal diminished sensibility in the lower extremities. Three months later an attempt was made to stretch the large nerve-trunks of the upper extremities, but unfortunately the patient died from an epileptic attack which came on during the

chloroform narcosis. The conclusion to which the author comes is that the diagnosis was a mistaken one, for he found no trace of disease in the posterior columns, and these are invariably affected in tabes. Moreover, the clinical history of the case did not correspond to the usual course of that affection.

Novel Effect of Nerve Stretching.—In one of Debove's cases stretching of the median and radial nerves only ameliorated the symptoms on the side of the operation, while it relieved them entirely on the opposite side. The subject of nerve stretching in locomotor ataxy (tabes) was discussed at the Congress, and the unanimous opinion of those whose experience in the procedure rendered them capable of forming a judgment, was in its favour—Prof. Gairdner Stewart regarding it as the greatest advance yet made in the therapeutics of the disease.

Massage for the Relief of Tabetic Anæsthesia.—Schreiber (*Medicin.-chirurgische Rundschau*) claims very good results from massage in a case of locomotor ataxy in an advanced stage, with lancinating pains, gastric crises, paralysis of the abducens nerve, and complete anæsthesia of both gluteal regions. Having been convinced that massage is capable of curing the anæsthesia which presents itself in the course of neuralgia, especially in sciatic, Schreiber resolved to attempt this treatment in the case under consideration, although it had been heretofore claimed that mechanical treatment is contra-indicated in locomotor ataxy. In daily sittings of five minutes' duration the affected parts were kneaded with the clenched fist in various directions. The manipulations were performed with moderate force, and did not cause pain. After twelve days the anæsthesia, which had existed five months without any intermissions, disappeared entirely. Türck was the first to point out that rubbing was sufficient to relieve mild anæsthesia, and he asserted that the benefit derived from salves and liniments was in a great measure due to the conjoined mechanical manipulations. What the *rationale* of the treatment is cannot be said. A single case is, however, not of much value as evidence of the good result of any treatment whatever.—(*Am. Journal Nerv. and Ment. Dis.*).

Tribasic Phosphate of Silver in certain Nervous Diseases.—Dr. Allan M'Lane Hamilton has found this drug of considerable value—

1. In more or less acute myelitis with disturbance of the bladder and rectum, improving the control over these organs, and causing a decided gain in muscular power.

2. In seven cases of posterior spinal sclerosis there was subsi-

dence in the violence of the pains, and material increase in the power of locomotion in those that had taken the drug for over a year.

3. In six cases of inveterate epilepsy depending upon gross inflammatory intracranial changes, there was diminution in the number of attacks.

Dr. Hamilton believes that a persistent and proper use of this salt will do much more for the patients than any of the drugs hitherto used to benefit cerebral tumour and general paralysis, though he expects no cure in these hopeless cases.—(*Alienist and Neurologist*).

THE RADICAL CURE OF CANCER.

Dr. J. Collins Warren, of 58 Beacon-street, Boston, Mass., U.S.A., who, in October last, was delegated to receive competing essays on the subject of the radical cure of malignant disease, announces that three essays were presented. In the consideration of their merits the assistance of Dr. George B. Shattuck, editor of the *Boston Medical and Surgical Journal*, was invoked; and it has been decided that no essay is worthy of a prize. The same subject—namely, the Probability of the Discovery of a Cure of Malignant Disease, and the Line of Study or Experimentation likely to bring such a Cure to light—is proposed for essays to be presented in competition not later than the first day of December, eighteen hundred and eighty-three (1883), to the above-named, who, with such assistance as he may select, will be the judge of their merits. For the best essay on the above subject a prize of One Thousand Dollars will be given, the right being reserved to withhold the prize in case no essay of sufficient merit be presented. The sum above-mentioned has already been deposited in the New England Trust Company, of Boston, subject to the call of the judges. The essays must be legibly written in English, and neatly bound. Each one must bear a motto, and be accompanied by a sealed envelope bearing the same motto, and enclosing the name and address of the writer. They will all remain in the possession of the donor of the prize for convenience of reference, and the privilege is claimed to publish the successful one, with the name of the writer No writer, however, surrenders the privilege of retaining a copy of his essay, and publishing it. The decision concerning the merits of the essays will be made chiefly from a practical stand-point, it being the object of the donor of the prize to obtain suggestions by which a search for a cure for cancer may be instituted.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE COLLEGE OF PHYSICIANS.

SESSION 1881-82.

GEORGE JOHNSTON, M.D., President.
ALEXANDER NIXON MONTGOMERY, M.K.Q.C.P., Honorary Secretary.

Wednesday, May 3, 1882.

J. W. MOORE, M.D., Vice-President, in the Chair.

Notes on a Case of Enteric Fever treated in the Royal Infirmary, Phœnix Park, Dublin. By BRIGADE SURGEON R. W. JACKSON, C.B.

PRIVATE D. S., 2nd Battalion Royal West Kent Regiment, age twenty-three years; service six years. The details of this case, which was under the charge of Surgeon Swaine, A.M.D., are from his case book.

Private S. was admitted to hospital on the 10th March, 1882, direct from the transport which brought the regiment from South Africa. He suffered from abscesses about the toes; otherwise his health was fair. It appears there was a good deal of enteric fever among the troops in Natal, from which station the regiment returned home.

On the 6th April, while a patient in hospital, he had a shivering fit, followed by hot and sweating stages. His temperature, however, was not taken until the 8th April, when it registered 101·4° in the evening.

9th.—There was marked nervous depression; tongue furred, bowels constipated, and some bronchial irritation; slight headache; no abdominal tenderness; temperature 101°; pulse 96. To have quinine, as the symptoms were considered more like those of remittent than enteric.

10th.—Temperature 100°; pulse 88; respiration 22; extreme nervousness and depression; states he is going to die; bowels acted twice in twenty-four hours; motions soft and brown; deposit of lithates in urine; no expectoration; no abdominal tenderness; no spots. Evening—Temperature 101·4°.

During the absence of Surgeon Swaine on eviction duty the only record of the case is the morning and evening temperatures ranging from 99·6° to 102·3°.

On the 14th Surgeon Swaine reports that S. was very low and nervous; bowels still costive; no tympanites or iliac tenderness; tongue thickly furred, brownish towards centre; slight bleeding from nose; tremor of hands and tongue; sleepless. The evening temperature on this day was 103·6°.

15th.—Temperature 102·4°; pulse 120, weak; respiration 26; bowels not open since night of 13th inst.; delirious during night; tongue furred and dryish. Evening—Temperature 103·2°.

16th.—Temperature 101·4°; pulse 100; respiration 28; no physical signs of pneumonia; bowels costive; tongue coated with thick whitish fur; lithates in urine; no spots; no abdominal tenderness; wanders frequently. Head to be shaved and blister applied. Evening—Temperature 104·6°.

17th.—Temperature 101·4°; pulse 112; respiration 28; bowels costive; tongue moist, with white fur, red at tip and edges; delirious and shouting during night; passes water in bed; sleeps or rather dozes constantly; says his wrists are painful; no abdominal inconvenience complained of. Evening—Temperature 102°; pulse 120; respiration 30.

18th.—Temperature 100·8°; pulse 100; respiration 30; bowels costive for five days, although he had castor-oil yesterday; the nervous twitching is less than on yesterday; had a good night; slight bronchial cough.

There was little worth recording during the 19th, 20th, and 21st. On the evening of the 21st he became comatose, and died at 5 20 p.m.

Post mortem examination seven hours after death.

Congestion of vessels on surface of brain, haziness of arachnoid, and fluid increased to double amount of normal state.

Lungs congested; some purulent secretion in bronchi.

Heart normal. Liver congested and slightly enlarged.

Spleen three times the size of the normal condition, congested.

Peritoneum strongly attached to bowel, and thickened by a layer of lymph, the result of recent inflammation, and stained by fæcal matter.

Bowels distended with gas, and the ileum filled with fluid fæcal matter. Peyer's patches were in various stages of congestion and ulceration; some of the ulcers were $1\frac{1}{4}$ inch in diameter; two of these were in a sloughy state, and some showed signs of repair; perforation had taken place at one of these sloughy patches; more than a foot of bowel was affected.

[This specimen was shown at the Medical Society.]

Remarks.—In reviewing the above case it will be apparent that there were several peculiarities in the symptoms and course of the disease.

From the state of the ulcers in the ileum there is every reason to believe the disease existed for some weeks before his admission to hospital for another affection.

In this patient the chief reason for diagnosing the disease as enteric was the range of the temperature, which in this instance was less modified by the malarial influence than in most cases of fever in men who have been subjected to the taint. In place of the diarrhœa so frequently met with in cases of typhoid, in S.'s illness there was constant constipation, although in the *post mortem* examination the small intestine contained fluid fæces of the appearance usual in enteric fever.

The extreme nervous depression was another marked symptom. From the first the man insisted that he should die, and never varied in the gloomy forecast. The absence of abdominal tenderness and tympanites was also a source of difficulty in defining the fever—in fact, there was more reason to expect notable lesion in the nervous centres than in the intestines. The tongue for some days of his illness had the whitish thick fur so often found in remittent fever.

The Chairman said the lesions in Brigade Surgeon Jackson's case were certainly those of typhoid fever. It had been stated, however, that the patient's bowels were costive all through the disease, and that the patient died on or about the fourteenth day. It was interesting to observe that the glands of the colon were affected as well as those of the ileum.

Dr. Charles F. Moore asked whether there was any information as to the sanitary condition of the troop ship.

Brigade Surgeon Jackson said the deceased came in one of Donald Currie's vessels, the "Balmoral Castle." He unquestionably brought the disease from Africa with him. The colonel said he was admitted into the ship's hospital on the 9th of March, and was there until her arrival in England. It appears from the surgeon's note of the case that there was a sudden rise of temperature; no abdominal tenderness; no spots; no diarrhœa, but constant constipation, and profound nervous depression.

The Chairman remarked that cases of typhoid fever which were characterised by constipation from the beginning to the end were not at all unlikely to terminate, as this did, with destructive ulceration of the intestine and perforation leading to peritonitis.

Two Cases of Eczema, both fatal, with a few Remarks on the Disease. By Henry Kennedy, A.B., M.B., Univ. Dubl.; Fellow of the King and Queen's College of Physicians; one of the Physicians to Simpson's Hospital, and the Whitworth, Drumcondra.

In the following brief communication I would call attention to two cases of eczema, both of which proved fatal. Such an event is rare, and

possibly entitle the cases to a special notice. Independently of this, however, eczema is a disease of much moment, being very common, and frequently very serious in its effects; and I would hope that bringing it forward may lead to an interesting and, at the same time, useful discussion. Before making any remarks, however, it would be best to give in some detail the two cases which are the foundation of this paper, and without further preface I shall now proceed to do so.

Case I.—Some years since I was asked by letter to prescribe for an infant of seven months old. He was born at full term, was one of a large family of brothers and sisters, all of whom were healthy, and was described as being a plump fat child, but with a shade of paleness in his face, which was out of keeping with the rest of his appearance. He was nursed by his mother—a healthy woman—and seemed in every way healthy till the seventh month, when signs of irritation began about both ears. In the course of a fortnight this had developed into a rash, which was pronounced by the late Dr. Jacob of Maryborough to be eczema. From the very outset the irritation was a very marked symptom. Even now, when the disease was so local, the itching was very troublesome. By degrees the rash spread over the head, and then the face got involved; and here it assumed the form of "crusta lactea." Then the neck, body, and extremities exhibited the disease; so that finally no part of the body was free of it. If the itching was great when the ears only were engaged my hearers will understand what it became when the entire surface of the body was involved. Night after night was spent, and scarcely a moment's ease was enjoyed, either for the child, the nurse, or the parents; and though the itching was almost constant it seemed always worse during the twelve hours of the night. In this way some six months passed away, and certainly a more pitiable case it would be hard to conceive. Finally, I was asked to go down and see the child, and when I did I must say I was a good deal surprised at its appearance. I had expected to find an emaciated child, covered with an eczematous rash. The rash was there, but the child was by no means wasted. On the contrary, it gave me the idea of being somewhat swelled—the head as well as the body. I believe now that this swelling was a part of the disease, with which I was not as familiar then as I have been since. The entire surface was affected with the disease; but it was redder on the face than elsewhere, and seemed almost as if it were raw. All the crusts here had disappeared, but there were several angry looking fissures and little dots of blood, and the eyelids were only half opened, apparently as if the disease had puckered up the skin, which I believe it had. Through all this diseased skin of the face the paleness, to which I before adverted, was observable. But it was more on account of the general state of the child I had now been

asked to see it. It had begun to refuse its food—at times throwing it up; and the general distress, bad as it had always been, had increased. The pulse, as near as I could guess it, was now about 200. It is enough to say that the child lived in this state a week longer, and then died of some kind of fit. It was fourteen months old at its death, which it must be allowed was almost to have been desired; for a more trying case it was never my lot to witness.

Case II.—This case afforded a very marked contrast to the last. The patient was a female of sixty-seven years of age; one of two sisters who had seen better days, but were now in very reduced circumstances; they occupied the one room. The patient, when I first saw her, had been about two years ill, and presented an unusually well-marked example of eczema. She was literally affected from the crown of her head to the sole of her foot, and the entire surface was of a reddish colour; but some parts were redder than others. Her great suffering was from the itching, which broke her rest much; and it was about the elbows and knees she suffered most, more particularly the latter. She told me she was a good deal reduced in both flesh and strength; still she was able to be up most days. Her pulse was weak, and beat between 80 and 90, and her tongue was redder than natural. The kidneys were acting fairly, but the urine was high coloured and very acid. Under treatment, of which arsenic formed the chief part, the symptoms got a good deal better, the itching being decidedly relieved. It was, I think, on my third visit that she directed my attention to her throat, by saying she experienced some difficulty in swallowing. On inspecting the inner throat I could not detect anything wrong. But on looking at the outside and neck my attention was at once caught by the state of the parts, which were rigid, and when touched gave the idea of hardness, and being matted together. On making her swallow it was clear a considerable effort was needed. I also noticed that opening her mouth was a kind of effort, and the jaw was not at all free in its movements. It is enough to say that this state steadily increased, and regular dysphagia came on, and to such a degree as certainly helped to shorten the patient's life, which occurred some two months subsequently. She had, however, been much reduced before the swallow became implicated. It is but right to add the surroundings of this case were, in the highest degree, unfavourable.

Such is a sketch of the two cases I wish to bring under the notice of this Society. It is possible they may afford some room for discussion, as the termination in each is, to say the least, unusual. In the case of the infant my explanation would be that an idiosyncrasy existed, which defied, as it were, all treatment, for eczema at this time of life is very constantly amenable to treatment. Nor is the idea that an idiosyncrasy existed in this case so far fetched. I have seen a child of ten years of

age quite crippled with nodular rheumatism; and I have seen parties who had fever again and again, and finally die of this disease. In the same way you will meet cases where the tendency to erysipelas lasts through life; and so of other diseases. The treatment cannot, I believe, in this instance be set down as unfitted to the case. It included all that is usually adopted in cases of the kind, and certainly was similar to what has succeeded again and again in other cases, which seemed just like it, yet it failed here to afford even temporary relief. I shall be glad to hear any observations on this point from any present.

But there is a second point which the infant showed in a degree, but which the second case given exhibited in a more striking and important way still. I allude to the puckering of the skin, which the infant had in the eyelids, and the second case in the skin of the neck. That this state of the skin and subjacent parts constitutes a part of, at least, some cases of eczema I cannot doubt. The prolonged inflammatory action seems to lead to it. Probably several present may have known a member of our own profession who died not long since. This gentleman had been a very great sufferer from eczema; I believe I may say for a quarter of a century. He cannot be said to have died of the disease; but that it must have tended to shorten his life admits of little doubt. He had the best advice which this city and London could give. I speak of the case here, however, because it afforded a very good example of the point of which I am now speaking. The disease, besides other parts, attacked the face, and in the course of time his features became a good deal disfigured; so much so as to materially change his expression. In the case detailed by myself this state of the skin affected another part, and, as already mentioned, with the most serious results.

It is anything but my intention to speak here of the many points which arise from a consideration of this disease. But there are one or two of a general character on which a few remarks may be made. In the first place I hold with those who look upon eczema as being essentially a constitutional affection. In other words, it is a wrong view to consider it as a disease of the skin. Nor is this a point of little moment. For if it be not held, and, what is of much more importance, acted on, grave consequences may ensue to the patient—to say nothing of the obstinacy which the disease will assuredly offer to anything of what is understood as local treatment. For myself I believe many cases occur where the cure of the disease must be conducted with considerable caution; inasmuch as serious consequences may ensue if the disease be cured too quickly.[a] The longer the disease has existed the more caution is, I think, needed. I have known parties whose general health suffered in exact proportion to the amount of eczema

[a] In the very able work by Dr. D. Bulkley, lately published, I do not find any allusion to this point.

present—that is, when the rash was out they spoke of feeling well, and *vice versâ* when the rash disappeared; as they were sure to feel indisposed in one way or another. In fact the disease, in some constitutions at least, acts as a safety valve; and of course the more extended the disease is the greater danger would arise from its going inwards. At the present moment I have a patient in the Whitworth Hospital, Drumcondra, who was sent in by Dr. Nedley. She had a severe attack of eczema of one leg, and of the acute character, attended with great heat and itching. She is a woman above sixty years of age. After being a week under treatment the disease attacked both ears sharply; but this did not cause me to alter the treatment, and by the end of three weeks she might be said to be well. This was a much quicker cure than it has usually been my lot to effect. She was scarcely well, however, till she began to complain of her breathing, and I then learned that for some time previous to the attack of eczema she had felt her breathing oppressed; yet she had never mentioned this whilst under treatment, but only now that the eczema had been cured, and, as already stated, rather rapidly so. On examination of her chest I was not able to detect anything abnormal in either the heart or lungs. The former beat feebly, but she did not allow to her breathing being hurried on exertion. She had no cough. The urine was higher coloured than that of health, and I now prescribed for that symptom. She left hospital, however, before this treatment could have effected any change, and she complained still of her breathing. I have not heard of her since. This patient had been in the habit of drinking porter daily.

There can be no doubt, I think, that in this instance there was a distinct alternation between the eczema and the dyspnœa. In fact, the rash acts as an outlet to the system, and in a good many instances too; but in some in a very much more marked way than others. If time allowed I could adduce other instances of a similar character.

At times the disease, or rather the healing of it, leads to a different result, and parties after being freed from the eczema grow fat. It is more than probable that this was what took place in the case of the first Napoleon; for we read he had suffered, and for a considerable time, from some skin affection, and that when it was healed he at once began to get fat.

Of the close connexion between the gouty poison and eczema there can be no doubt. All writers on the subject speak of it, and I only allude to it here for the purpose of stating that the idea should ever be kept in our minds; for I need not observe that gout, in its developed form, is comparatively a rare disease amongst us; whereas the gouty diathesis is very common, and it is in connexion with it that eczema makes its appearance. The successful treatment of many cases of the disease

turns, I repeat, on our keeping steadily before us the possibility or, I should rather say, the frequent occurrence together of these two states. It need scarcely be added that it is to eczema occurring in middle or after life that these remarks mainly apply.

Of the sequelæ of the disease there are two which seem to me worthy of a moment's notice; the more so as I am not aware of their being described in any of the standard works. The first is that when an attack of eczema is about to get well it may do so by another affection taking, as it were, its place. This other affection is pemphigus, which I have seen show itself when the eczema was steadily waning, and on the same portions of the body. This state, it is well known, is attended with much less suffering than when eczema is present. It is to be noted that the appearance of pemphigus has seemed to me to call for a change, or at least some modification, of the treatment, which had, till that period, been adopted.

The second point which I would notice, and which I have ventured to call a sequela, is the occurrence of hæmorrhage, most generally from the nose. Not that this occurs when the eczema is present, but when it has very much declined, or has possibly been cured. Under these circumstances epistaxis, and of a very severe kind, may arise. Possibly I address some who have met such cases. As far I myself have seen, the hæmorrhages occur in parties who are inclined to be fat, and who at some former period had suffered from eczema. The state known as plethora is often well marked in these cases; but though the loss of blood may run them to death's door I have not seen any case which proved directly fatal. Of course the connexion between the bleedings and the eczema is open to question. Still the point seems to me worthy of notice.

Of even a sketch of the general treatment of eczema I cannot speak here. Such would far exceed my present limits, as well as strain your forbearance. I may say, however, it seems to me that the treatment of the disease has undergone a great improvement within the last few years, and that in the great majority of cases a complete cure can be confidently expected. We have clearer views of the causes of the disease, and what it is we have to correct and conquer; and I think it may be said with certainty that the results are far in advance of what was attained a quarter of a century since.

Before concluding these desultory remarks there is a single symptom to which I would ask attention; more, I confess, with the hope I may get some hints for its relief, than that I can give any help myself. I speak of the itching which constitutes such a prominent symptom of the disease. All I address are aware of the suffering it entails; and I have often heard parties say that uncomplicated pain was much easier borne than itching. I have sometimes wondered whether any particular nerves

were implicated; for it is certain that pain often exists without itching, and itching without pain. Itching, too, may exist, as all know, without any rash, eczematous or otherwise. Of this I saw a very aggravated instance about a year since. The patient was a fine old lady much above seventy years of age, who, after what was a doubtful attack of gall-stones, began to complain of itching of the surface, which in the course of two or three days spread over the whole frame. I really thought the patient would have died from the irritation alone, caused by the intense itching, which gave her no rest day or night—being, however, much worse at night. The reason, however, why I speak of this case is, that though the patient seemed to tear the skin no rash was visible, even when examined by a magnifying glass. I will not take on me to assert that the treatment used in this case was successful. The attack, which lasted more than a fortnight, seemed rather to wear itself out. I may state that Dr. Little saw the patient with me.

There is one point, whilst speaking of the means for relieving itching, worthy of note. The very same remedies which afford relief in one case will fail in another, though apparently identical; and this it is, I apprehend, which renders the treatment uncertain. In the more violent forms of itching, and particularly if it be at all what is understood as an acute attack, nothing has seemed to myself to afford more relief than the application of what may be called wet heat. We know, as a matter of experience, that the heat of the bed aggravates much the sense of itching; but it is otherwise with warm water, which rarely fails to give, at least, temporary relief. All I address are, I am sure, aware of this, and though each person has their own special remedy to add to the hot water, I believe the relief arises essentially from the water, which it is best to apply as hot as the hand and the patient can bear. It is in the worst forms of itching that the remedy is of the most marked use; for when the case is of a more chronic character other remedies come into play. Into these, however, it is not my intention to enter here.

In concluding, this meeting will, I trust, forgive me speaking of such a homely subject, as the sense of itching certainly is. But it is a feeling from which many suffer, and is often the source of great torment, having in some instances affected the very mind itself. As such I believe it to be worthy of our closest attention.

Dr. Quinlan said they must all agree that eczema was a distinctly constitutional disease, and one not to be treated as a local affection. Within the last few months he saw a patient who was threatened with apoplexy, and at the same time suffered from eczema; the moment the eczema got better he was attacked with aphasia. Sometimes the physician's resources were taxed to the uttermost, as remedies that relieved one patient would not relieve another. He had recently seen a

severe case of this disease, in which the itching was a most troublesome symptom. He (Dr. Quinlan) tried every remedy, including hydrocyanic acid, calomel powder, and the hypodermic syringe; but the only thing that relieved the patient was the warm bath, in which he got comparative comfort. After he had suffered for some months the disease seemed to wear itself out, and the itching came to an end. The case differed from those mentioned by Dr. Kennedy in this respect, that the patient's surroundings were everything that could be desired. He cautiously avoided everything that he was recommended to avoid; and even during the worst period of his disease he had an excellent appetite.

Dr. Beatty asked could the disease in any of the cases have been pityriasis rubra.

Dr. Cameron said a preparation which in a great many instances had mitigated, and in some had removed the itching, was sweet milk combined with liquor plumbi subacetatis—one ounce of the solution to four ounces of milk. Milk thus combined with sugar of lead would keep perfectly sweet for two or three years. He agreed with what Drs. Kennedy and Quinlan had stated as to the comfort given by warm water. He once had an attack of eczema himself, being of a gouty diathesis; and after trying several local and constitutional remedies, he found that nothing but persistent bathing every night in water, as hot as he could bear, did any good. He had for four years a patch about the size of the palm of his hand on his left leg near the heel. He made an arrangement for keeping up a continuous application of the hot water for two or three hours at night; and then before going to bed he applied the milk and acetate of lead solution. In the course of a week the effect was marvellous. The scales disappeared; the skin began gradually to assume its normal appearance; and by perseverance in the treatment the scaly patch of eczema disappeared in the course of a month.

Dr. C. F. Moore remarked that in cases of derangement of the liver, which occurred in India, eczema was not uncommon; and mercurial applications had been found to relieve the itching. He had known itching to be produced by worms in the alimentary canal; in such cases the itching ceased when the worms were removed.

Mr. Doyle said he had seen cases of eczema which were local and not constitutional, the disease having been caused by friction of the saddle in riding. Cavalry soldiers were liable to it. He had also known local eczema to result from varicose veins. First there was congestion; and that was followed by an eczematous condition, and afterwards ulceration. As a constitutional disease he had met it in both the scrofulous and the gouty diathesis. The scrofulous form was said by German authorities to occur in cases which would otherwise have had hydrocephalus or croup. He had found it necessary to give narcotics

in eczema. One of the worst cases of itching that he had seen occurred in an old woman who was jaundiced, but she had no eruption.

The CHAIRMAN said one of the most important points in connexion with the cases brought forward by Dr. Kennedy was that both the patients died. Fatal cases of eczema were every year recorded in the country. To take an example, in England, in the year 1879, 308 deaths were attributed to eczema, the total deaths registered in that country during the year having been 271,496. In the cases reported by Dr. Kennedy he thought the causes of death were pretty evident. In the case of the infant the loss of rest at night alone would have been sufficient to cause death, and the only wonder was that the child lived so long as seven months. In the other patient, who was sixty-seven years of age, loss of rest would also have been an important factor in bringing about a fatal result; besides, there was the asthenia caused by the dysphagia. As to the swelling in the case of the infant, it was probably due to inflammatory thickening of the tissues. Eczema was a constitutional disease in many cases, but he quite agreed with Mr. Doyle that in the absence of a gouty or strumous diathesis local eczema might occur as the result of irritation, and this was more amenable to treatment than the constitutional affection. Dr. Kennedy had alluded to the marked correlation between constitutional eczema and gastric and other visceral symptoms. The warm bath alluded to by Dr. Quinlan is certainly a most valuable remedy in severe eczema, as in other diseases also, notably in confluent smallpox. Some years ago the late Dr. Stokes and Dr. Hawtrey Benson reported to this Society cases in which marvellous results followed the warm bath in the delirium of smallpox; and when we consider the terrible irritation of the skin that occurs in that disease, the conditions are not very different from those which are present in eczema. Dr. Cameron speaks of a strong application of lead with milk, but that might produce plumbism if the eruption were general and the skin in a bleeding condition. Such applications as hydrocyanic acid and carbolic acid might also induce toxic symptoms. Great relief, however, is sometimes obtained from the use of a weak solution of carbolic acid. The Atlas of Skin Diseases, published by the New Sydenham Society, contained a beautiful plate of pityriasis rubra, the disease referred to by Dr. Wallace Beatty. The symptom of wetness was not always present in eczema. Salicylic acid prepared as an ointment with vaselin, in the proportion of 20 to 30 grains to the ounce, and applied locally, had been found of great use. The occurrence of eczema in individuals of a gouty tendency might be explained by the irritation of the skin by uric acid and its salts escaping in the perspiration.

DR. WALLACE BEATTY said a good many cases of eczema had been reported, some of which had ended fatally, in which the skin was affected from the crown of the head to the soles of the feet, there being

no moisture on the skin, but an accumulation of scales with great redness. These symptoms resembled those in Dr. Kennedy's second case.

Dr. Henry Kennedy, in reply, said the lady whose case he mentioned had advanced disease of the heart and symptoms of angina, so that warm baths would not have been suitable for her. He tried morphia, but it not only made the itching worse, but also sickened her stomach. As to the good effects of the warm bath in other cases there was not the slightest doubt. In connexion with this disease he might mention the so-called "prickly heat of the tropics," which most probably arose from irritation of the liver. He had often used buttermilk in cases of eczema, but not sweet milk, except as a poultice with bread. In the child's case baths in every form were tried, including both simple baths and baths of oatenmeal, bran, and starch. He was not sure that he had seen any case of localised eczema that could not be said to have been more or less constitutional.

RADFORD LIBRARY

On the Therapeutic Properties of Quinine Iodate and Bromate, and on the Physiological Activity of Superoxidised Molecules.

Dr. Cameron made a communication on this subject. [It will be found at page 472.]

Dr. H. Colpoys Tweedy asked was the fact of having this preparation in a granular form likely to interfere with its stability? He had kept a small quantity of the granular iodate for six months, and a faint yellowish tinge was now beginning to appear on it, as if some of the iodine had been set free. He had tested the therapeutic effects of iodate of quinine in several cases in hospital within the last six months, chiefly cases of pulmonary congestion, where, after the ordinary action of pneumonia, the recovery was rather slow. He found a marked effect to ensue from the use of effervescing iodate of quinine in teaspoonful doses.

Brigade Surgeon Jackson asked what was the relative expense of these new preparations, as compared with the old sulphate of quinine? During twenty-five years he had spent a good deal of public money on the old familiar sulphate of quinine, and he had been over and over again disappointed. He was sure that these bromate and iodate compounds would be successful. On the West Coast of Africa, men who had suffered from intermittent fever constantly got sulphate of quinine, but he did not think the results were such as to justify the reputation it had acquired.

Dr. Quinlan said that through the courtesy of the manufacturers, Messrs. Graham, he had been at its introduction furnished with samples of Professor Cameron's iodate of quinia both in its ordinary and in its granulated form for effervescence. He had in the early specimen observed the yellow tinge alluded to by a previous speaker, but not in

a later one, which had remained perfectly white. This he was disposed to regard as owing to some imperfection in the preparation of the early sample. He considered that the useful feature of the iodate of quinia consisted in the fact that its acid easily separated from it, thus leaving it circulating in the blood in a basic form. According to Kerner a respiratory capacity of 3,000 cubic centimetres was able to destroy in the system 15 grains of basic quinia in the twenty-four hours, which would render it better suited to cope with the bacillus malariæ in the treatment or prevention of periodic fevers. Sulphuric acid held its quinia, and nearly the whole compound was excreted by the kidneys. With regard to the potassium iodate he remembered when almost every sample of the potassium iodide contained some of it, and a most irritating salt it was. The late Sir D. J. Corrigan used to recommend the addition of some potassium carbonate to iodide mixtures for the purpose of relieving this irritation. At the present day this iodate was never found in properly prepared iodide; the concluding step of the preparation being to mix the product with powdered charcoal, and incinerate it at a low red heat, which reduced all the iodate present to iodide by carrying off the oxygen in the form of carbonic acid gas.

Mr. Knott said that the Medical Society was greatly indebted to Professor Cameron for bringing under their notice so early this newly-discovered salt (bromate) of quinine. He had no doubt that the large proportion of easily dissociated oxygen present in both the iodate and bromate of quinine would add materially to the physiological activity of these drugs. He would expect in this way highly beneficial effects from these salts in the treatment of cases of sluggish pneumonia, as mentioned by Dr. Cameron; also, he would suggest, in the management of pulmonary emphysema. He should not be surprised to hear of the bromate of quinine proving a specific in some forms of neuralgia, as the sedative effects of the bromine would be added to the usual action of quinine. It was generally admitted that the forms of neuralgia in which the latter drug had given best results are those in which evidence exists of malarious or rheumatic influence. In both these cases there is a marked determination of blood to the part, and the periodic dilatation of the blood-vessels which occurred in the former variety—every pulsation of which was conveyed to the over-sensitive nerves which accompanied them—was well known to any medical man who, like himself, had suffered from periodic facial neuralgia. When next affected he should certainly try Dr. Cameron's remedy at once. He believed that there was sufficient evidence in favour of the idea that the more prominent physiological effects of quinine were essentially due to diminution of the systemic oxidation which took place under the influence of this drug. By aid of the tincture of guaiacum test, Binz had demonstrated that the index of oxidation of the blood was lessened. It was found by

Lewiski that diminution of temperature, both external and internal, followed the ingestion of quinine without any corresponding loss from the surface to account for it. It had also been observed to diminish the metamorphosis and elimination of nitrogenous compounds, especially uric acid. The excess of oxygen in the newly-described salts would probably act as a beneficial corrective. The capillary contraction which followed the ingestion of quinine promoted the same result as that now described. It was found by Binz and Scharrenbroich that previous injection of a solution of quinine into the circulation of a frog prevented inflammation resulting from irritation of the mesentery of the animal. If injected *after* application of the irritant it was found to diminish the rapid diapedesis, also to paralyse the amœboid movements of the escaped leucocytes, and precipitate them on the outer surface of the capillary walls. With regard to the elimination of quinine, Bricquet found that one-third only of the quantity ingested escaped with the urine. Bence Jones described a substance existing in animal tissues, to which he gave the name of *animal quinöidine*, which responded to the chemical tests of quinine and displayed its fluorescent properties. This substance was, he affirmed, increased by use of quinine, and probably fixed a portion of the drug in the system for some time.

Dr. Cameron, in reply, said the great point he had endeavoured to establish was that the addition of oxygen to the iodine compounds instead of diminishing increased their activity.

The Society then adjourned till next session.

A RAPID PROCESS FOR COLOURING AND PRESERVING PARASITES.

M. Balzer, Chef du Laboratoire de l'Hôpital Saint Louis, gives a method which he has successfully employed in his researches on the vegetable parasitic diseases of the skin, and also in studying microbes and parasites in the tissues, the liver, kidneys, muscles, &c. The process consists—1, in freeing the parts to be examined from fat; 2, staining them in a saturated alcoholic solution of eosine; 3, washing in distilled water, or, better, in a 40 per cent. solution of potash; 4, mounting and preserving in a similar solution of potash; 5, when the preparation is sufficiently clear substituting for solution of potash a saturated solution of acetate of potash. The time which the specimen should remain in the eosine solution varies according to its size and thickness. Usually half an hour or an hour amply suffices. The achorion, however, would be coloured in a few minutes.—*Gaz. Méd. de Paris*, 6 Mai, 1882.

PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

FORTY-FOURTH ANNUAL SESSION.

JOHN A. BYRNE, M.B., President.
WILLIAM ROE, M.D., Honorary Secretary.

Saturday, April 1, 1882.

DR. J. A. BYRNE, President, in the Chair.

The late Sir Edward B. Sinclair.

DR. DENHAM said: Before the business of the evening commences I have a painful duty to perform. Since our last meeting we have lost one of the greatest ornaments of our Society. I need not say I allude to the death of Sir Edward Burrowes Sinclair. He held a position to which he was fully entitled, and which he filled with honour to himself and with advantage to the public. In proposing a vote of condolence with Lady Sinclair, I feel that I am only fulfilling a public duty; and I am sure that my proposal will be acquiesced in by every member of the Society. I will not detain you by attempting to pass any eulogium upon Sir Edward Sinclair. His character speaks for itself. I beg to move—

"That this Society desires to express its sense of the loss which it has sustained by the death of its distinguished member and ex-President, Sir E. B. Sinclair, Knt.; and to assure Lady Sinclair and the members of his family of their sympathy with them in their bereavement."

DR. ATTHILL.—The melancholy duty of seconding the resolution devolves upon me. We all share the regret Dr. Denham has expressed at the removal from amongst us of one who so recently took such a prominent part in our Society. Very recently, indeed, he filled the chair which you, sir, now occupy, and, I need not say, with dignity; but his loss more particularly affects the School of the University to which he was attached. As an eloquent and painstaking lecturer he was unrivalled in the city.

The PRESIDENT.—Gentlemen, the mover and seconder of the resolution have so well expressed the feelings which animated all of us on the announcement of the sudden death of Sir Edward Sinclair that I am sure it is not necessary for me to detain you. I shall therefore simply ask you to pass the resolution in solemn silence.

Hypertrophy of the Uterus.

Dr. Atthill.—I have to submit a specimen of a disease which I have long believed in, but the existence of which I have never been able to verify by a *post mortem* examination until now. The condition is hypertrophy of the uterus with dilatation of its cavity as the result of stenosis of the cervical canal. The specimen was taken from the body of a patient who was admitted into the Rotunda Hospital about the 25th of last February; she was a servant. From early girlhood she had suffered more or less pain at each menstrual period. This had increased in intensity and duration with the lapse of time; and latterly her periods were painful and prolonged, and the loss of blood was excessive—so much so that she had become perfectly anæmic. At the time of her admission to hospital she was about forty years of age. On making a vaginal examination I found the uterus very much enlarged—it gave me the idea of being nearly as large as a small cocoa-nut. I could hardly feel the os; and my attempt to introduce the sound entirely failed. On examining the cervix with a speculum, the os was seen to be a mere pin-hole; and it admitted, with very considerable difficulty, a small-sized silver probe, which passed more than five inches into the cavity. From the size of the uterus and its extreme firmness, and from the great hæmorrhage, I diagnosed the existence of a fibrous tumour of the uterus. What the exact nature of the tumour might be, I could not say; but, in order to relieve the pain and also with a view to ulterior proceedings, so as to reach the cavity of the uterus by dilatation or otherwise if needful, I thought it wise to divide the os. Accordingly, I incised it with a knife. No symptom of any consequence followed. A few days subsequently I made a deeper incision, as far as the os internum; and the moment I did so I was met by a copious gush of muco-purulent fluid, as if I had opened an abscess. I carried my incision no further. The patient suffered no pain or distress. At the end of four or five days she was attacked with jaundice, and incessant vomiting set in; and she died in about three days afterwards. On making an autopsy I found no tumour of any kind in the uterus; it was merely enlarged, the walls being enormously hypertrophied. I have long believed in this state of things; but it has been strenuously denied by others. I think this specimen is conclusive on the point.

Dr. Roe.—What was the immediate cause of death?

Dr. Atthill.—Localised peritonitis. She was a very anæmic woman, and in fact she died from exhaustion.

The President.—Was she married?

Dr. Atthill.—No; she was certainly a virgin.

Dr. Purefoy.—I think some light may be thrown on this case by what has been more than once observed to be the result of incising the

imperforate hymen. It has been frequently observed that, although relief was given by making a small opening and allowing the accumulated menstrual fluid to escape, in a few days afterwards symptoms of pyæmia showed themselves, and the patient died. I think that in the present case death was due to septicæmia.

Dr. Macan.—As I understand stenosis of the os, if it led to the accumulation of fluid inside the effect of that would be to lead not to thickening but to thinning of the walls of the uterus. Where the os is closed and the fluid retained, it is plain that the more the uterus is expanded the thinner its walls must grow. Of course if the uterus afterwards had the opportunity of contracting, the walls would get thicker; but I do not think the present a very satisfactory example of dilatation of the cavity of the uterus from the closure of the os. At the same time the pathological view taken by Dr. Atthill, of the stenosis causing dilatation of the cavity of the uterus and consequent degeneration of the mucous membrane and menorrhagia, is exceedingly interesting; but I do not think that the specimen proves a thickening of the walls from the causes mentioned. I think they might have contracted since the operation.

Dr. Roe.—What do you believe to have been the cause of the menorrhagia?

Dr. Atthill.—Chronic endometritis, the cavity of uterus enlarged, and the mucous membrane quite pulpy and disorganised.

Dr. Roe.—Do you at any time suspect there was an intramural fibroid or other disease of the uterine wall?

Dr. Atthill.—No, I do not think it is at all difficult to understand the coexistent hypertrophy and dilatation; you get both from the obstruction. The uterus has to act powerfully every month in order to expel the menstrual fluid. In this case the patient suffered continually for days together from the powerful contractions of the uterus in its efforts to expel the fluid. That was the cause of the thickening of the walls. Thinning of the walls could not result from stenosis of the cervix. Where you have thinning of the walls it must be the result of unhealthy degeneration. In all cases where I have met with dilatation of the cavity of the uterus as a result of stenosis, I have believed that I was dealing with hypertrophied walls.

Dr. Roe.—It would be well if the specimen were examined microscopically, as the condition of the uterine walls might throw some light on the nature of the case.

Hegar's Dilators.

Dr. Macan.—Having on a former occasion showed Hegar's dilators, I wish now to bring under the notice of the Society a slight modification which I have made in them, and have found on trial to be useful. It

simply consists in this, that the base of No. 1 should exactly correspond in size with the top of No. 2, and so on to the last. The result of this is that the dilatation is effected gradually. In the originals there is a difference of one millimetre between the base of each dilator and the top of the next.

Dr. W. J. Smyly.—I have used Dr. Macan's modified dilators and found them useful. In cases, however, where the cavity of the uterus is only 2½ inches long, they cannot form a continuous cone.

Imperfect Development of Genital Organs.

Mr. Horne.—This curious specimen I obtained last evening at the Rotunda Hospital. The mother, aged nineteen, was admitted into the hospital yesterday morning at eleven o'clock. A breech presentation was diagnosed. On examination I could not find the rectum, neither did any meconium come away. She had had very good health during her pregnancy until the last two months, when she began to suffer very much from vomiting. The child seemed to be at about the eighth month, and it only made a few attempts at respiration. I found over the front of the chest a regular network of greatly distended veins. The whole abdomen was greatly enlarged, particularly on the left side. On examining the buttocks of the child I found an almost total absence of any genital organs. There seems to be rudimentary traces, but whether they are of a penis or not I cannot say, and there is a complete absence of anus. In the child's back high up there was a small pin-hole, but it did not seem to go deeper than the skin. I have not made a *post mortem* examination of the specimen yet.

Dr. Macan.—I move that the specimen be sent to a committee of reference.

Report of Committee on an Aborted Ovum.

Mr. Horne read the following report on a specimen which had been referred to a committee at the last meeting:—

"*Report.*—We have examined the specimen of an aborted ovum referred to us by the Society at its last meeting. We find that it consisted of an unusually perfect specimen of a disease commonly known as Hydatid Degeneration of the Ovum, or more correctly as Multiple or Diffuse Myxoma of the Chorionic Villi. The entire tumour was about the size of a small orange. Its periphery consisted of a complete cast of the uterine cavity formed for the most part by the decidua vera. In the centre of the tumour there was a small cavity lined by a smooth layer of the amnion. This cavity contained nothing except some liquid grumous fluid. There was no trace either of the embryo, or of its funic attachment. The chorionic membrane was everywhere perfect, with villi springing uniformly over its surface. In close connexion with the

chorion we found a complete envelope of decidua reflexa, pierced everywhere by the villi. The space between the two layers of decidua was occupied by a closely woven meshwork of villi, all displaying the cystiform type of degeneration. The spaces between the cysts and villi were filled up by clotted blood. The cysts were small, few of them exceeding in size that of a large white currant. They were connected with one another by apparently normal tracts of villi. Mr. Abraham, Curator of the Museum, R.C.S.I., having examined some of the separate cysts, has pronounced them to be of the usual myxomatous structure.—Signed, WILLIAM C. NEVILLE, ANDREW S. HORNE."

Some cases of Noma Pudendi. By R. D. PUREFOY, M.B.

THE term noma occurs at an early date in medical writings, even so early as the time of Hippocrates, who applies it to putrid and eroding ulcers. Subsequent writers have, unfortunately, used the word with a latitude of application, which however convenient as a *refugium ignorantiæ* is scarcely consistent with precision and accuracy of description. Vogel, in the 16th century, applies it to that form of gangrene of the cheek which is much more generally known as cancrum oris; and in an excellent modern treatise, that by Lewis Smith, a similar application is made of it; on the other hand, in several of our standard works on children's diseases the term is not to be found at all. Under the name of noma pudendi I propose to lay before the Society this evening a short account of some cases illustrating an affection of the external genital in female children, which has been fitly called noma pudendi, also cancer aquaticus, and by Velpeau, gangrenous inflammation of the vulva; though in these islands, at least, gangrene is but an exceptional sequel or concomitant of it. The only writer, so far as I can ascertain, who describes this formidable malady is Mr. Kinder Wood, who forcibly depicts its course and symptoms, and lays down excellent suggestions for its treatment. His language is so perspicuous and concise that I shall make no apology for quoting largely from his monograph. It commonly happens that the diseased condition is already fully developed before medical aid is sought, but in a few recorded cases these symptoms preceded, by about three days, the affection of the pudendum—chilliness, succeeded by heat, slight headache, loss of appetite, thirst, torpor of the bowels, and general languor. Pain in micturition commonly first directs attention to the genitals, which will be found enlarged, inflamed, and of a livid colour. Generally within twenty-four hours from the inception of the inflammation the inner and outer surface of the labia are covered by a crop of vesicles, which quickly burst, and leave as many superficial ulcers, from which flows a dark offensive ichor, so acrid and irritating that all the adjacent parts, as far back as the anus, as well as the inner and anterior surfaces of the thighs become excoriated,

and, in severe cases, ulcerated. After the inflammation begins the pulse is quick and weak, and as the ulceration extends the face becomes of a peculiar pallid hue, which is very pathognomonic of this affection. At this stage, too, retention of urine becomes in some cases a very prominent and troublesome symptom. When early treatment has been neglected, or the attack is of a severe type, the deep foul ulceration invades successively the parts contiguous to the original seat of the disease, and a fatal termination, preceded and hastened by intractable diarrhœa, takes place, commonly within ten or fourteen days. When, on the other hand, early and judicious treatment has been adopted, the ulceration may be arrested and even partly healed within a similar period, though for several weeks after the peculiar pallor of the face, general debility, and a copious unhealthy vaginal discharge testify to the trying nature of the primary attack. Mr. Wood concludes, and I think justly, that the affection, of which these are the salient features, should be regarded as a disease of a distinct and specific nature. From erysipelas infantilis it is easily distinguished, as this occurs shortly after birth, attacks male and female children alike, is followed by early and copious suppuration, not infrequently by mortification and often death, the abdominal viscera have been found glued together by inflammatory exudation, whereas in the body of a child who had died of the disease under consideration the abdominal and thoracic viscera were found free from disease. In mild cases it has been mistaken for purulent vulvitis, which is a comparatively common affection, unattended with any constitutional disturbance, and sometimes lasting for several weeks without any apparent injury to the child's health. It deserves to be remembered, however, that both these diseases have, from time to time, been made a ground for preferring charges of the vilest immorality against unoffending persons; of this fact Mr. Wood gives a very striking illustration. A child, aged four years, who had slept in a bed with a lad aged fourteen, was admitted into Manchester Infirmary with an inflamed and swollen condition of the external genitals, and, notwithstanding treatment, died in a few days. An inquest was held, at which Mr. Wood expressed his opinion that death was the result of violence, and a verdict of murder was returned against the boy with whom she had slept. Fortunately for him several similar cases, affording no ground for such suspicion, occurred shortly afterwards, and Mr. Wood, seeing his mistake of diagnosis, informed the authorities of his altered opinion, and procured the boy's release. In connexion with the differential diagnosis another disease calls for passing notice. I mean that form of pemphigus to which Dr. Stokes, in an essay published many years ago, applied the term gangrænosus, its popular name being "burnt holes." This affection attacks young and ill-fed children, and is marked by the formation of vesicles, ending in destructive ulceration, and not infrequently gangrene. I cannot,

however, conclude, as Dr. Mansell and Evanson did, that the disease so graphically described by Dr. Stokes is identical with noma pudendi, though they have many characters in common, and call for somewhat similar treatment.

I have seen in all five cases of noma; all of them occurring in children under three years, except one which had reached the age of eleven. The first, and only fatal case amongst these, was a wretched infant not quite a year old, whose mother had left it to the tender mercies of an old woman residing in a village not far from Dublin. The disease was already well developed when I saw it first, and my efforts only availed to prolong its life for a few days. The four remaining cases recovered, though satisfactory convalescence was but tardily established. In the early stage I found that warm bread poultices gave relief and allayed the inflammation, and when that end was attained the continued application of some mild antiseptic dressing, such as carbolic oil in the proportion of 1 in 40, materially expedited the healing of the ulcers; the arrest of the acrid discharge will be much hastened by frequent syringing with warm water and Condy's fluid. At the same time a liberal supply of nourishment and wine, in suitable quantities, were allowed, and quinine with muriatic acid was advantageously exhibited.

The PRESIDENT.—I remember that many years ago while I was attending temporarily as physician in the North Dublin Union Workhouse some cases of this disease occurred, and it spread through the ward like erysipelas. I have very frequently seen vulval affections and other discharges in children which have given rise to accusations against men, so that a very careful examination should always be made in such cases.

DR. HENRY KENNEDY.—There is a disease called cancrumoris or "burnt holes," which has been described by the late Dr. Stokes. The epidemic in the North Union, to which the President alludes, must be the same as one which I saw there, and in which most of the children who were attacked died. I think Dr. Purefoy has been particularly fortunate in securing the recovery of four cases out of five; but we have better means now of treating the disease antiseptically than were known in that day. The late Dr. Mayne used caustic when he found that the disease was spreading. If I met a case of the disease I would use chlorate of potash and muriatic acid. I prefer it to quinine, which is exceedingly apt to purge. The children in which the disease occurs are generally half-starved and of pallid countenances, and sometimes they are plump but very pale. The retention of urine is due to the pain which the child suffers in attempting to pass water.

DR. MORE MADDEN.—The interest of the subject is very great in a practical point of view. I have been connected with the Hospital for Sick Children ever since its foundation, and have seen a very large number

of cases of noma pudendi and ulceration of the genitals in female children. In the great majority of the cases charges had been brought against persons of having attempted to have intercourse with the child; and in some cases we were enabled to prevent criminal charges from being brought against innocent persons only by convincing parents that the affection was a disease, and not the result of violence. In one case I had to attend as a witness in the Commission Court, the charge being one of rape upon an infant who was suffering from noma pudendi. My colleague, who is present, will bear me out in the statement that this disease is much more frequent than is generally supposed. In the majority of instances it is nothing but the result of neglect and dirt, and very often it is produced by the irritation of worms. It is readily distinguishable from "burnt holes," and is, I think, a specific form of ulceration of the genital organs resulting from irritation caused by worms or acrid secretion, and in some instances in children of more advanced age from irritation caused by malpractices. I have never seen a case in which the disease was not arrested by attention to cleanliness and the use of blackwash and antiseptic lotions. It chiefly occurs in starved and scrofulous children.

Dr. M'Veagh.—As senior physician of the institution referred to by Dr. More Madden, I wish to mention that we have had in it a number of cases of vulvitis of a peculiar kind, which proved most intractable. I think the disease originates in dirt, starvation, and neglect of local cleanliness. In many of the cases, as Dr. Madden has said, charges were made against persons. At present there is a young girl in the hospital whose parents cannot get out of their heads the idea that some violence has been done to her. Another feature of these cases is that they are very difficult to cure. The treatment which has been found most effectual is local applications, syringing the passages with some astringents, and attention to cleanliness and baths. I have never seen so many cases of this disease as have lately occurred, and it is curious what should be the cause of it. They have great pain and irritation in making water.

Dr. Macan.—I think two distinct diseases are being confused. One is noma pudendi, which is gangrene of the vulva; and the other is the ordinary vulvitis, which we have all seen in scrofulous children. Noma pudendi, when it does occur, is likely to eat down to the bone, and is not confined to superficial ulcers. It occurs sometimes in children who have been broken down by exanthemata—such as scarlatina and measles. Another danger lies in the fact that the primary symptoms are almost *nil*. The child has no pain or other symptom at a time when it is found to be suffering from the disease, and then the disease eats down to the bone and the child dies of pyæmia. I do not think, however, that the severe form is very common. Most of the books on children's diseases say that an affection like cancrumoris attacks the genitals of children

and produces the same effects, and I think the ordinary vulvitis is not at all the same as noma pudendi.

Dr. Roe.—I must confess that I am rather astonished at some of the remarks I have heard, having always thought, and with good reason I believe, that noma pudendi is a very rare disease indeed. During the last fourteen years I have seen a great many children at the Coombe Hospital and only saw one case there, and altogether I have seen but four cases of what should be properly called noma pudendi. I think it is being confounded to-night with a disease described by the late Sir William Wilde in the *Medical Times and Gazette* of the year 1853 under the name of "Infantile Leucorrhœa," in which paper he gives the account of five cases of alleged felonious assaults. The cases brought before us by Dr. Purefoy seem to have been at least mild, and his drawing hardly represents the more severe forms of the disease. I have no doubt noma pudendi is quite analogous to cancrumoris, merely differing in situation. In severe cases I should be inclined to trust to the local application of nitric acid, with good nourishing diet and tonics, suitable to the individual case.

Dr. More Madden.—A doubt has been thrown on the accuracy of the observations made by Dr. M'Veagh and myself. It has been said that we have confounded two distinct diseases. I am quite aware of the distinction between noma pudendi and common vulvitis. I have seen numbers of cases of vulvitis, and I have seen ulcerations of the genital organs in children as severe as in cases of noma pudendi.

Dr. M'Veagh.—Dr. Madden's observations are quite in accordance with mine. We have met with most severe cases, accompanied with constitutional symptoms, and yet no other appearances, except severe purulent discharges and sometimes local ulcers, requiring active treatment.

The President.—We should keep clear the distinction between the two diseases. Vulvitis is extremely common. Noma pudendi, on the other hand, is extremely uncommon, and is analogous to cancrumoris. I think the disease ought to be called cancrum pudendi. In many of the cases the disease is confined to one of the labia.

Dr. Purefoy, in reply, said it was remarkable how often diseases of this kind followed the exanthemata. Still, they did not so often now see cases so severe as Dr. Kennedy had described.

On the Causation of Head and other Presentations during Labour. By William C. Neville, M.D., M.Ch., and M.A.O., Univ. Dubl.

Nothing is more characteristic of recent scientific effort than the eagerness with which it seeks to connect phenomena with the causes which govern them. *How* and *why* are words which express the commonest questionings of our thoughts, and in answering them we have eliminated

from consideration alike the blind notion of chance and the fetish doctrine of uncontrollable caprice. Men have learned to regard natural phenomena as the resultants of all-pervading and unfailing laws, and in such a light to seek out their interpretation. Observations are not less common than formerly, infinitely more so, so that with their greater multiplicity and complexity there arises also a continuously increasing need for something more than a mere chronicling of details. Thus, of necessity, we come to seek for laws upon which multitudes of seemingly isolated phenomena may depend for a common origin, well assured that a knowledge of these laws is capable of giving us a new power of foreseeing and conforming to their consequences.

The spirit of modern medicine is in full accord with that of science in general; amassing the data of experience, deducing laws, and availing itself freely of whatever it finds of use in the work of its neighbours. It is in no sense fatalistic. Phenomena are being studied in connexion with their causes; the principles of ætiology are being unravelled; and so our powers of prophylaxis are increasing side by side with a fuller knowledge of the causes which lead either to health or to disease.

These thoughts have been in a measure suggested by a consideration of the subject which I desire to bring under your notice this evening—viz., the general principles which determine the various presentations of the fœtus at term.

The child's "lie" in the uterus may be longitudinal or transverse, according as its long (vertebral) axis corresponds with or deviates in the main from the normal long axis of the uterine cavity. Thus presentations may be classed under two heads, longitudinal or tranverse, as follows:—

A. Longitudinal "lie."—*a.* Presentations of the cephalic extremity, including (1.) Head proper, *i.e.*, the cranial vault; (2.) Face; and (3.) Brow. *b.* Presentations of the pelvic extremity, including (1.) Breech proper; (2.) Foot; and (3.) Knee.

B. Tranverse "lie."—Presentations of (1.) Shoulder; (2.) Hand; and (3.) Elbow.

The comparative frequency of these different presentations as met with in all labours, premature or at term, is shown in the following table:[a]—

The head proper presents 19 times in 20 labours = 95 per cent.
„ face or brow presents once in 250 labours = ·4 per cent.
„ pelvic extremity presents once in 30 labours = 3·3 per cent.
„ shoulder, hand, or elbow once in 125 labours = ·8 per cent.

Spiegelberg makes the cranial vault present still more frequently—in 97 per cent. of close on 98,000 observations. It is evident, therefore, that the head is far in a way the most frequent presentation. It has been conclusively shown that it is also the safest presentation, both for mother and child, even though nature may be quite able to bring other pre-

[a] Tarnier and Chantreuil. Traité des Accouchements, p. 457.

sentations to a successful issue. *Par excellence*, it is the natural presentation. On the principle, then, which should obtain throughout all scientific inquiries, that we should study what is frequent and normal before that which is infrequent and abnormal—physiology before pathology, or morphology before teratology—we may in the present case endeavour first of all to determine the causes which result in so great a frequency of head presentations. The individual factors of normal causation having been ascertained, we shall be in a better position to seek for those which act so as to produce abnormal results.

The consideration of the statical conditions under which the fœtus usually spends the latter months of pregnancy in utero merits our first attention. These conditions depend in part upon the child itself, and in part upon the nature of its environments.

The customary *attitude* of the fœtus in utero may be described as one of almost universal flexion. The chin is flexed on the sternum; the arms and forearms are crossed in front of the chest; the thighs are flexed on the abdomen, the legs on the thighs, and the dorsal surfaces of the feet on the front of the shins; while the trunk is itself so flexed towards its abdominal aspect that there is marked dorsal convexity. Thus folded up in itself the fœtal body assumes a roughly oval form; the larger extremity of the oval corresponding to its breech, and the smaller to its head end.

The oval form of the fœtal body is not impressed on it by the surrounding limitation of the uterine cavity; the flexion on which it depends dates from a very early period of pregnancy, towards the beginning of which at least no pressure is exercised on the child's body by its environments. Even at the end of pregnancy, when the uterine walls are most closely adapted to the fœtal body, the flexion is too complete to be accounted for in this way. Flexion, moreover, is usually present in cases where a pathological excess of liquor amnii precludes the possibility of its having been enforced by pressure. Again, it is characteristic of living and not of dead children, though in both cases compression would equally act as an efficient cause. It is therefore vital rather than mechanical; intrinsic rather than extrinsic in its causation.

The average specific gravity of the full-time child's body taken collectively is about 1050—that is to say, it will just rest supported in fluid of this density. The specific gravity of the child's body is not, however, uniformly distributed. It has been proved that the specific gravity of the head is greater than that of the trunk; and most authorities who have investigated this point are agreed that the centre of gravity of the fœtal ovoid is nearer its head than its breech, and nearer its dorsal than its ventral surface. Dubois first, and after him Simpson, showed that a fœtus of the latter months would sink through water in such a way as to first strike the bottom of the containing vessel by its back or scapula, and

not by its head. Hence they argued against gravity as the determining cause of head presentations. Dr. M. Duncan has shown that such experiments, "involving as they do rapid motion in falling through water are fitted to afford results of a very small degree of value or reliability So far as they go they point to the fact of the descent of the fœtus following the shoulder." These experiments, however, were the prototypes of those more accurately conducted by Duncan, Veit, Kehrer, and others with a view to determining the position actually taken by a fœtus when immersed in fluid of its own specific gravity. It was found that under such conditions, abandoned to the unhampered influence of gravity, the body of a fresh still-born fœtus, whose ovoid form was retained by threads, floated in an oblique position with its head end lowermost, its dorsal surface facing downwards, and its right shoulder lower than its left. The assumption of such a position proves, at all events, that the centre of gravity of the fœtal ovoid lies between its centre of buoyancy—*i. e.*, the centre of gravity of the mass of fluid which it displaces—and its head end, and more towards its right dorsal than its ventral surface. Inasmuch as the breech is the larger extremity of the fœtus it follows that the position of the centre of buoyancy is nearer to it than to the head.

Within the uterus the fœtus is surrounded by liquor amnii, the average specific gravity of which may be stated as 1012. The quantity of this fluid varies very much even within limits which are strictly normal, Karl Schroeder in his manual stating that at term it amounts on an average to from one to two pounds—a rather large estimate as it appears to me. There can be no doubt that compared to the size of the fœtus it usually becomes relatively less from the seventh month of pregnancy onwards, though during the same period it absolutely increases by about one half its previous bulk. The uterine cavity, nearly globular between the fourth and fifth months of gestation, becomes progressively more ovoid as pregnancy advances. At term its shape is that of an ovoid, with a larger fundal and a smaller cervical pole.

Like the ovoid shape of the fœtus that of the uterus is probably also mostly due to causes inherent in itself, and independent of its contents. Dr. M. Duncan, adverting to this point, seems to hold the opposite view, quoting in its support the opinions of many, though now somewhat antiquated, authorities. The uterine contents consist of the liquor amnii and fœtal body, the former of which must, however, usually protect the uterine walls from any direct continuous pressure of the latter. The weight of the ovum, in the erect position of the woman, falls most heavily on the anterior uterine wall, low down in the neighbourhood of the bladder. Hence the bulging usual in this region towards the end of pregnancy. Certainly the fluid pressure is least over the fundal surface; and yet it is to the growth of its fundal extremity that the ovoid form of the uterus after the

fifth month is principally due. This extra growth of the fundus cannot then depend merely on the pressure of the uterine contents, but rather on its own intrinsic qualities. The shape and structure of the unimpregnated uterus would seem, moreover, to provide for its development into the normal rather than into any other shape. It is probable, therefore, that both uterus and fœtus normally take an ovoid form independently of one another—a conclusion which, if it be true, is of considerable importance.

The anterior uterine wall towards the end of pregnancy forms an inclined plane, which gives the chief support to the body of the gravid uterus. The direction of the long fundo-cervical axis of the uterus depends, therefore, in great part on the support given to it by the more or less firm abdominal walls. When this support is normal the axis of the uterine oval closely corresponds with the axis of the pelvic inlet, inclined, when the woman is in the erect position, to the plane of the horizon at an angle of about 35°. In dorsal decubitus this angle becomes one of 40°–60°; while in the half-recumbent posture, such as that adopted when lounging back in an easy chair, the long axis of the gravid uterus becomes perpendicular, or nearly so, to the plane of the horizon. Only when the woman lies on her side does the uterine axis almost coincide with the horizontal plane.

One other point concerning the uterine cavity. The amnion closely lining it exhibits everywhere a smooth and slippery surface, so that friction between the fœtus and its envelop is as trifling as possible throughout gestation, as well as during parturition.

Granting the various conclusions which have been above stated, the problem immediately presented to us is to find the position in which the fœtal body will rest most securely towards the end of pregnancy; the position of stable equilibrium, into which, if displaced, the fœtal body—so long as it remains freely movable in the liquor amnii—will always tend to be restored.

This problem may be considered under three conditions; according as the woman is in the erect, dorsal, or lateral position. It is needful, at least, to indicate each of these conditions, since in each of them the inclination of the uterine axis to the plane of the horizon differs.

Let us assume now that in the erect position of the woman the fœtal ovoid, acted on by some disturbing influence, becomes for a moment placed, as is shown, in a longitudinal, antero-posterior section.

Fig 1.

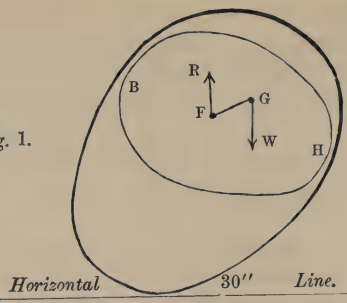
H represents the head, and B the breech end of the fœtus.

G „ its centre of gravity.

F „ its centre of buoyancy—that is, the centre of gravity of the mass of fluid displaced by the fœtal body, and which is towards the breech side of G.

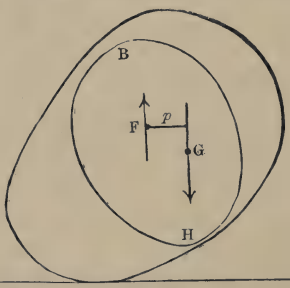
ST MARY'S HOSPITAL LIBRARY

Fig. 1.



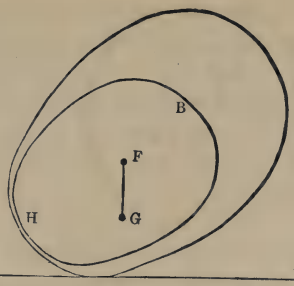
The forces at work on the fœtal ovoid now are:—a force, W, equal to the weight of the fœtus, acting vertically downwards through G; and a force, R, equal to the weight of the fluid displaced, acting vertically upwards through F, and thus resisting descent. Inasmuch as W is greater than R, the fœtal body cannot remain for more than a moment in the position shown in Fig. 1. It will at once commence to sink. Moreover, as the force of descent acts through a point G, which lies between the centre of buoyancy, F, and the head end of the child, this latter will, in accordance with mechanical principles, tend to swing undermost in the liquid. In addition, therefore, to simple descent, a "twist" is generated, the effect of which is to make the sinking body rotate until G is vertically beneath F, or as nearly so as circumstances permit.

Fig. 2.



The cooperation of the sinking and twisting factors in the action of gravity on the fœtal ovoid may be supposed to bring it into contact with the anterior uterine wall in some such position as is shown in Fig. 2. As previously stated, this wall forms a plane, inclined to that of the horizon at angle of 30°. Gravity continuing to act as above, the body will obviously slide downwards along this slippery plane until arrested by the lower uterine segment—in some such position as is shown in Fig. 3. In this position descent has gone as far as possible, and even if G be not quite vertically beneath F, still further twist-motion is effectually neutralised by surrounding resistance. The head has become as it were pocketed in the lower uterine segment.

Fig. 3.



M. Duncan has stated the law of sinking as it affects the fœtus, as follows:—"The line of descent is not a vertical line in the long axis of the body, drawn from what is actually its heaviest part, but a vertical line from the centre of buoyancy to the centre of gravity." The action of gravity on a fœtus not in a condition of equilibrium I prefer to describe, as including a tendency to sink, and a tendency to twist until the centres of buoyancy and of gravity are in the same vertical line. The principles involved are sufficiently simple.[a]

[a] With the object of giving a short diagrammatic sketch of how gravity acts in originating head presentations, I have in the above paragraphs perhaps rather exaggerated the actual potency of the twist factor. In applying hydro-dynamical principles to this question we must assume that both uterine and fœtal ovoids are rigid as to shape. The law of sinking, as applied to the fœtus may, then, be more completely stated as follows:—The body will move downwards, in the same way as if its whole mass, collected at G, was being acted on by a vertical force equal to W—R; while the body will also turn round G as if G was fixed, and the body was being acted on by R only. The "moment" of R round G, which gives rise to the twist is measured by the product of R into the perpendicular p let fall from G on the vertical line passing through F. The power of the twist will, therefore, vary directly as the perpendicular distance p between the directions of the two forces, and will entirely disappear when $p = 0$, *i.e.*, when G and F are in the same vertical line. An obvious consideration which results is that the "twist" will be a maximum when G and F are in the same horizontal plane, since p will then be greatest. Consequently, a transverse, or rather an oblique, "lie" of the fœtus will, so far as this factor is concerned, be the most unstable of all positions. On the other hand, the twist may be slight in some breech presentations where G is almost vertically above F. Here there is at best a state of very unstable equilibrium, unless the fœtus is well supported, as towards the end of pregnancy, by surrounding pressure. The sinking factor, W—R, is slight; at term, taking as proved that the weight of the fœtal body averages 7 lbs., and that its specific gravity is 1050, while that of the liquor amnii is 1010, it amounts to nearly $4\frac{1}{2}$ ounces. This is the weight which the fœtus, when in a state of stable equilibrium, and immersed in liquor amnii, throws upon its supports. Between the seventh and eighth months this weight will not be more than $2\frac{1}{2}$ ounces, allowing that W is then equal to $3\frac{1}{2}$ lbs., and that the specific gravity of both child and liquid is as above. I know of no way by which to measure the possible amount of the twist. Though probably a very weak it is a very constant factor; and to this constancy of action we must attribute whatever effect gravity has in favouring a head presentation. It can hardly be supposed to be effective, except under conditions permitting of free mobility on the part of the child.

Suppose now that the woman lies on her back. The conditions of the problem remain essentially unchanged. The posterior uterine wall takes the place of the anterior, and forms a more steeply-inclined plane, along which the gravitating head end of the fœtus will slide downwards into its resting-place. Only, in fact, when the woman lies on her side does not the inclination of the uterus supplement and aid gravity in originating head presentations.

It is quite possible, as a result of some passing disturbance, that the breech should come to occupy the lower uterine zone. In the foregoing paragraphs the mode of action of gravity in causing head presentations has been shown to depend on the "twist," which is opposed to any other presentation. It is easy to see how this "twist" may become practically inoperative, though for a time only, on account either of active fœtal movements or other disturbing cause. When the breech does in this way come to present, the fœtal ovoid is at best in a condition of unstable equilibrium—still acted on by the twist, and liable through its action to have the head brought lowermost on the first opportunity. Such opportunities are frequent so long as the fœtus continues freely movable within the liquor amnii; they occur whenever the fœtus is displaced upwards in the uterus, and so left free to sink into a fresh position.

So far the problem has been considered mainly under conditions permitting of free mobility on the part of the fœtal ovoid. From the middle of the seventh month onwards the bulk of the fœtal body increases rapidly in comparison with that of the liquor amnii. The child grows out towards, and comes to be more closely in contact with, the uterine walls; it grows, as it were, more rapidly than its environments; its movements become hampered, and it is so hemmed in that its disturbance becomes gradually more difficult. The position, which was at first one of stable equilibrium, becomes one of partial, sometimes almost of complete, fixation. Half revolutions of the fœtal ovoid, by which the breech comes to present instead of the head, or *vice versa*, become comparatively rare. They are especially rare when, as is usual in primiparæ, the head and lower uterine segment become imprisoned in the pelvic cavity during the last week or fortnight of pregnancy. If, therefore, the breech should have happened to present during a slightly earlier period, it is easy to see how the presentation may have become permanent, despite its instability in respect of gravity, by this continuous increase of constraint. The tendency to "twist" may be held in check by the hard limits of necessity.

Thus we have arrived at the conclusion that gravity, acting continuously under normal conditions, is capable of originating head presentations. To these normal conditions, collectively considered, we may apply some such term as form-adjustment, or form-accommodation. This form-accommodation is the mixed product of the relations normally

existing between the uterus and its contents; depending in part on the shape, size, and inclination of the uterus, and in part on the shape, size, and sufficient rigidity of the fœtal body. Gravity can only act on the fœtal ovoid within limits prescribed by its environments; gravity is the originating, form-accommodation the maintaining factor in causation.

Two additional factors, which have played a prominent part in the history of this subject, still remain for some brief consideration. These are—the periodically recurring contractions of the pregnant uterus, to which attention was first attracted by a paper of Dr. Braxton Hicks; and the active movements of the fœtus itself—instinctive, reflex, or otherwise.

Braxton Hicks, Kristeller, and others have attached much weight to the effect which the recurring contractions must have in forcing a correspondence between the long axes of the uterine and fœtal ovoids. During each contraction the transverse diameters of the uterus shorten, while its antero-posterior diameters lengthen a little; favouring, therefore, a rectification of an oblique or cross "lie" of the fœtal ovoid. It appears to me that one important effect of these contractions must also lie in the rigidity which they give to the otherwise soft and pliable walls of the uterus. They fix, for a time at least, the form of the uterine cavity, and thus allow gravity to act, as previously explained, without the chance of interference from pressure, distortion, or slight flexion of its walls. In primiparæ the tonicity and firm support of the uterine walls are usually sufficient of themselves to preserve a central presenting position of the head. In multiparæ, however, the more lax state of the uterine walls, together with the relatively small amount of support which they obtain from their surroundings, commonly allow of some lateral displacement of the head up to within a very short time of labour. Complete replacement of the head may indeed only be effected by the stronger initial contractions of actual labour.

Besides these regular periodical contractions of the uterus we must include special reflex ones, excited by the pressure or irritation of parts of a fœtus which is not in accommodation with the form of the uterine cavity. Uterine discomfort ensues, and reflex contractions are excited, until, as explained above, the fœtus has assumed a position which no longer irritates.

The action of gravity and form-accommodation, even when they cooperate most perfectly, as in the case of head presentations in primiparæ, do not necessarily prevent changes of presentation during the latter weeks of pregnancy. Their combined action may even then be overridden by that of the remaining factor—fœtal movements. Karl Schroeder, in his "Manual of Midwifery," quotes the observations of Hecker, Credé, Schultze, and others, on these changes of presentation which occur near the end of pregnancy. It may be concluded, from

these observations that such changes are rare among primiparæ when the head presents, and when deformity of the pelvic brim does not prevent its entrance into the pelvis; that the head is always the most stable and the transverse the most unstable presentation; and that the general effect of such changes is to bring about the most favourable presentation.[a]

Thus it would appear that fœtal movements have considerable effect in promoting head presentations, though it is by no means necessary to follow Dubois or Simpson in giving to them the chief power in causation. They probably make head presentations more frequent than they would otherwise be, but do not alone account for their great predominance. Whatever the nature of these movements—reflex, instinctive, or spontaneous—the general effect of their action is sufficiently clear. They are most powerful in the lower extremities, and their effect must be to disturb or displace a pre-existing presentation. When the head presents the breech is lodged in the large or fundal extremity of the uterus, and is surmounted by a greater or less amount of liquor amnii. The lower limbs have then most freedom of movement, and, though they may disturb, cannot often displace the fœtus. When in any other position the breech projects directly against the uterine walls, and active movements of the lower extremities must tend to its displacement. The most powerful of fœtal movements have, therefore, a directly upsetting effect on all presentations other than those of the head. Hence an additional reason for the stability of a head presentation.

During the terminal six or eight weeks of pregnancy it must, I think, be conceded that fixation is so great that resistance to changes of the presentation would be usually sufficient to neutralise any possible twist action which may fairly be credited to gravity. Notwithstanding this resistance the fœtus does, as above stated, undergo frequent changes of position during this period; and if the fixation does not become extreme the final result of such changes is most commonly a restoration of a head presentation. In effecting such a restoration gravity cannot do more than take a smaller part. Hence I think we may conclude that active fœtal movements must prove, in a great number of cases, very efficient in determining a final head presentation, and that they are so efficient mainly because of their tendency to favour the most perfect adjustment possible between the uterine and fœtal ovoids. Thus the action of gravity, which was the chief factor in causation so long as the fœtus remained freely mobile, becomes, when once comparative fixation is established, merely a minor and subsidiary one—in all probability unable by its united action to change, for example, a breech into a head presentation.

[a] For a detailed account of these changes, *vide* Tarnier et Chantreuil. Traité des Accouchements. Pp. 457-474.

Summing up, then, we may account for the predominance of head presentation by the action of gravity, working constantly under the limitations of normal relationship between the uterus and its contents; greatly aided also by uterine contractions and fœtal movements. Any theory which neglects one or more of these factors is one-sided and incomplete.

One way in which the breech may present at term has already been passingly alluded to. It has been shown that fixation of the fœtal body increases rapidly during the last three months of pregnancy. As a consequence of this growing fixation, and in proportion to its degree, half-vertical revolutions of the fœtal ovoid become more and more rare. The fixation may become so complete as entirely to preclude axial changes in the position of the fœtal ovoid. In this way a breech presentation, which had first been caused by active movements or other displacing cause, may at a certain moment become, as it were, crystallised in position. The breech may not be able to escape again from the lower uterine zone, in which it had at one time been caught, *flagrante delicto*.

Statistics show that while the breech presents about once in sixty full-time labours, it presents twice as often in labours of all kinds—premature or at term. The causes which so often allow it to present in premature labours are the same as those which commonly act at term. These are—an excess of liquor amnii, allowing of too great a fœtal mobility; a want of the normal uterine form; and excessive or ill-timed fœtal activity. Other causes are those which consist in some other abnormalities of one or more of the factors which usually result in a head presentation. As these causes may likewise result in a transverse presentation they will immediately be considered in that connexion.

Transverse presentations, like those of the breech, and for the same reasons, are of comparative frequency in premature labours. Generally stated we may classify their causes under three headings; according as they act by (1) allowing of too great a fœtal mobility; (2) by interference with the normal inclination and ovoid form of the uterus; or (3) through causes depending on the fœtus itself.

(1.) An excess of liquor amnii, absolute or in relation to the size of the child, may in either case allow the shoulder of a too freely mobile and unconfined child to gravitate to the lowest level. Gravity, indeed, acting on a fœtus which is wholly uncontrolled by limitations might tend rather to cause than to prevent the presentation of a shoulder. Thus the shoulder is found to present rather frequently in premature births, when the fœtus, dead or alive, is small in proportion to the amount of liquor amnii. At term a pathological excess of liquor amnii (hydramnion), while acting as in the last case, would also interfere with the normal ovoid form of the uterus.

(2.) Causes which act by destroying the normal inclination and shape

of the uterus are those which give rise to obliquity, flexion, and distortion; either by the pressure of abdominal tumours, deformities of the pelvic inlet, or inefficient support from the abdominal walls; to simple distortion by the distension of twins, hydrops amnii, uterine tumours, or unusual situation of the placenta.

Undue uterine obliquity (especially lateral) or flexion are frequent causes of shoulder presentation among multiparæ. The want of tonicity of the uterine, combined with the flaccid unsupporting abdominal, walls may in their labours cause even an originally head presentation to hitch against some part of the pelvic inlet, and be thus shunted during a contraction towards the iliac fossa opposite to that of the obliquity. Besides the causes mentioned such obliquity may also be due to violence exerted from without—*e.g.*, traumatic influence, ill-fitting stays, &c. Under this heading we should also class those cases in which shoulder presentations, from their frequent recurrence in the labours of the one woman, would seem to depend on some inherent vice of growth on the part of the uterus.

(3.) Causes which depend on some fault of the fœtus itself are those which act either by destroying its form, altering the position of its centre of gravity, or giving rise to excessive or ill-timed displays of its activity.

The form and firmness of the fœtal body are attributes which depend for their maintenance on the life of the child. Let us suppose it dead in utero for some short time. Its muscles become flaccid; its ovoid form becomes disarranged by the falling away from the trunk of its now toneless limbs; and the vertebral column loses its normal elastic firmness. Form-accommodation is thus destroyed, and adaptive movements are rendered impossible. It has also been shown that the centre of gravity frequently shifts its position in the bodies of dead fœtuses. On both grounds malpositions are frequent among dead children. Especially is this the case when the dead fœtus is also premature, being then surrounded by an amount of liquor amnii which is large in comparison with its bulk. M. Duncan has given statistics showing that shoulder presentations are fully six times as frequent among dead and macerated as among living and healthy children.

Hydrocephalic and anencephalic infants show a more than normal frequency of shoulder presentations. This frequency depends in part on the loss of form, and on the alteration of the specific gravity of the head extremity in these cases; in part also, no doubt, on the comparative frequency of dead children or of hydrops amnii in such cases.

It is evident that ill-timed fœtal movements may result in a transverse or other unusual presentation. These movements may originate in the child itself, or be consequent on some sudden displacing violence exerted from without. In any case they would only be likely to occur

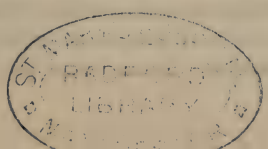
where there was some predisposing cause already provided, such, for example, as an excess of liquor amnii.

A consideration of the above summary of causes will show that many of them are to some degree capable of being provided against. Others, again, depend on the introduction of elements of uncertainty among the normal factors in the causation of head presentation. Thus abnormal presentations are rarely chance products, if such a term may legitimately be applied to results which we may at all events in great measure explain. It is quite certain that shoulder presentations would be much more frequent than they are were it not that the commencing contractions of labour and partial extrusion of the liquor amnii may bring form-accommodation for the first time into play. Whichever end of the fœtal ovoid may happen to be placed nearest to the os may at a certain moment be then forced to assume a central presenting position.

A partial loss of normal attitude, previous to (*i.e.*, primary) or during (*i.e.*, secondary) labour may affect the nature of a presentation. Thus in presentations of the cephalic extremity, the face, or brow; and in presentations of the pelvic extremity one or both feet or knees may become the actual presenting parts according as normal flexion is more or less wanting. I avoid entering into the special causation of these presentations, because I feel that in this paper I have already trespassed sufficiently on the time of the Society. The prophylaxis of malpresentations is an inviting subject upon which, though not here directly entered into, I would desire to learn whatever the experience of its members can afford.

THE ABORTIVE TREATMENT OF BUBOES WITH CARBOLIC ACID.

Dr. Morse K. Taylor, U. S. Army, in the April number of the *American Journal of the Medical Sciences*, publishes a paper on the abortive treatment of buboes by injections of carbolic acid. He reports twenty cases in which he certainly obtained remarkably successful results, and he states that within the last seven years he has treated nearly one hundred and fifty cases of various forms of lymphadenitis, arising from specific and non-specific causes; and, where he saw the cases before the formation of pus was well established, he had not failed to arrest the process immediately, and allay the pain in a few minutes. His method is to inject from ten to forty minims of a solution, containing eight or ten grains to the ounce, directly into the interior of the inflamed gland.



SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, M.D., F.K.Q.C.P.

Vital Statistics

Of the Eight Largest Towns in Ireland, for Four Weeks ending Saturday, April 22, 1882.

Towns	Population in 1881 (Unrevised)	Births Registered	Deaths Registered			Deaths from Zymotic Diseases							Deaths from Phthisis	Annual Rate of Mortality per 1,000 Inhabitants
			Total Number	Under 1 year	At 60 years and upwards	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhœa		
Dublin, -	348,293	823	856	143	181	–	70	2	1	3	22	6	130	31·9
Belfast, -	207,671	520	383	68	43	7	2	4	3	3	7	11	76	24·0
Cork, -	78,361	195	183	35	32	–	3	1	2	1	7	3	30	35·4
Limerick, -	38,600	95	66	5	21	–	–	1	–	–	1	1	8	22·3
Derry, -	28,947	101	78	11	17	–	1	–	–	–	1	1	15	35·0
Waterford,	22,401	44	51	7	12	1	–	–	–	–	1	–	11	29·6
Newry, -	14,782	25	28	4	9	–	–	–	–	–	–	–	3	24·6
Galway, -	14,621	29	40	6	13	–	–	–	–	–	2	–	3	35·6

Remarks.

The rate of mortality was extremely high in Galway, Cork, and Londonderry; very high in Dublin and Waterford; rather high in Newry and Belfast; moderate in Limerick. The registered deaths in the four weeks give the following death-rate per 1,000 of the population annually—in twenty-eight large English towns (including London), 23·2; in sixteen principal town districts of Ireland, 28·3; in London, 22·0; in Edinburgh, 21·1; and in Glasgow, 25·9. Deducting the deaths of persons admitted into public institutions from localities outside the registration district, the rate of mortality in the Dublin Registration District falls to 31·3 per 1,000, while that within the municipal boundary of Dublin City is still as high as 34·1. The deaths registered in Dublin were 856, including 143 of children under one year old and 181 of persons aged sixty years and upwards. Of the total mortality 16·7 per cent. fell among children under one year.

The deaths from zymotic diseases in Dublin were 121, compared with a ten-years' average of 148·0 and with 183 deaths in the previous four weeks. This change for the better was altogether caused by the decline

in the mortality from measles, which has now been epidemic for six months. The fatal cases of this disease were 70, against 121 in the four weeks ending March 25. Only two of the 70 deaths occurred in all the Dublin hospitals, and the admissions of cases of measles in the period now under discussion (March 25 to April 22) were only 48. Sixty-six of the 70 victims were children under five years of age, and 18 were infants under twelve months. Smallpox is happily declining in Belfast, where the deaths from this disease were 7, against 15 in the preceding four weeks.

Phthisis was very destructive to life in Dublin (130 deaths), Belfast (76 deaths), Derry (28 deaths), and Waterford (11 deaths).

Diseases of the organs of respiration proved fatal in 187 instances in Dublin; the average number of deaths in the corresponding period of the preceding ten years was 189·9. The deaths from bronchitis were 123 (average = 137·2); those from pneumonia were 45 (average = 26·2).

On Saturday, April 22, the cases of epidemic diseases under treatment in the principal hospitals of Dublin included—smallpox, 0; measles, 30; scarlet fever, 13; typhus, 30; typhoid, 14; pneumonia, 22.

The mean temperature of the four weeks was 47·2° in Dublin, 47·9° at Greenwich, and 44·6° in Edinburgh.

Meteorology.

Abstract of Observations made at Dublin, Lat. 53° 20′ N., Long. 6° 15′ W., for the Month of April, 1882.

Mean Height of Barometer,	29·744 inches.
Maximal Height of Barometer (on 8th at 9 a.m.),	30·444 ,,
Minimal Height of Barometer (on 13th at 9 p.m.),	29·018 ,,
Mean Dry-bulb Temperature,	46·9°.
Mean Wet-bulb Temperature,	44·1°.
Mean Dew-point Temperature,	41·0°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·259 inch.
Mean Humidity,	80·5 per cent.
Highest Temperature in Shade (on 20th),	61·7°.
Lowest Temperature in Shade (on 16th),	31·2°.
Lowest Temperature on Grass (Radiation) (on 16th),	26·8°.
Mean Amount of Cloud,	57·7 per cent.
Rainfall (on 20 days),	3·526 inches.
Greatest Daily Rainfall (on 14th),	·803 inch.
General Directions of Wind,	E., W.N.W.

Remarks.

A cool, very changeable month, further characterised by a prevalence of polar winds, and a rainfall (3·526 inches) much in excess of the average (1·960 inches) for April in the previous seventeen years. There

was scarcely any appreciable increase of warmth as compared with March, the mean temperature of which month was 46·5°, while that of April was 46·9°, or very slightly below the average of the previous sixteen years.

During the first fortnight easterly winds prevailed. They were accompanied at first by frequent rains, but after the 5th by dry, cool, and bright weather, connected with an anticyclone, which lay for several days over the N.W. of Europe. Early on the morning of the 10th a dense vapour fog formed over the Irish Sea and the east of Ireland. After the 11th conditions became very unsettled, and frequent rains fell with variable winds and considerable alternations in temperature. There was a sharp frost on the 16th, the thermometer falling to 31·2° in the shade and to 26·8° on the ground in Dublin city. These temperatures were the lowest experienced since December 23, 1881. In Scotland heavy falls of snow occurred on this and the following day. From the 22nd to the end of the month the weather was very broken, owing to the passage of numerous depressions across the British Islands in an easterly or north-easterly direction. A peculiarity about these depressions was that each of them was followed in a few hours by a subsidiary bourrasque, travelling eastwards at a lower latitude than its primary. The result was the occurrence of dangerous gales in the vicinity of the subsidiary depressions—that is, in the English Channel and over the South of England, while to the north of their track cold weather and heavy falls of rain, hail, or sleet prevailed. In Ireland the 29th was one of the most severe days experienced for many months. At 8 a.m. the thermometer was only 34° at Roche's Point, Queenstown Harbour, and a heavy fall of wet snow was taking place. In Dublin the temperature at noon was 37·6°, and sleet fell in large quantities. On the morning of the 30th the Dublin mountains displayed a very wintry appearance, being deeply covered with snow. In Dublin the atmosphere was more or less foggy on the 4th, 8th, 10th, 11th, and 16th. Hail fell on the 24th, 26th, and 29th; snow and sleet on the 29th. Solar halos were seen on the 16th and 18th. On the evening of the 20th the crescent moon and the planets Venus and Jupiter shone in the western sky.

IDIOPATHIC GLOSSITIS.

Dr. Stuver reports a case of this affection. Incision was strongly urged but not allowed. Atomisation of an ammonium chloride solution (three drachms in ten ounces of water) was then resorted to, a steam atomiser being used. Relief was experienced after the first application. The solution was used for thirty minutes each time, four times during the night. The symptoms rapidly subsided, and in two days the tongue had regained its normal condition.—*Med. News*, 18th March.

PERISCOPE.

Edited by G. F. Duffey, M.D., F.K.Q.C.P.

A BANDAGE FOR THE TREATMENT OF VARICOCELE.

There are many cases of varicocele where a radical operation would not be advised, for which the ordinary suspensory bandage is not sufficient to prevent the dragging sensations and neuralgic pains which are at times present in almost every case. In the *American Journal of the Medical Sciences* for April, 1882, Dr. Royal Whitman describes a form of bandage which simply inverts the testicle, allowing the mass of veins which were pressing upon it to fall below, while steady pressure is kept up on the enlarged veins in a direction which does not impede the circulation, and by the elevated position of the testicle favours the return of venous blood.

THE VARIETIES, MECHANISM, AND DIAGNOSTIC SIGNIFICANCE OF MITRAL PRESYSTOLIC CARDIAC MURMURS.

From a careful clinical study of the varieties, mechanism, and clinical significance of mitral presystolic murmurs, in the *American Journal of the Medical Sciences* for April, 1882, Prof. Austin Flint draws the following conclusions:—1. There are two varieties of this murmur, which are distinguished by differences in quality and in mechanism. One variety is a rough, and the other is a soft, murmur. 2. The roughness in the first of these varieties is characteristic, and may be distinguished as vibratory or blubbering. The softness of the second variety is bellows-like, like other soft cardiac murmurs. It may vary in pitch and intensity, but as a rule it is low and weak. 3. The rough murmur is due to vibrations of the curtains of the mitral valve, caused by the passage of blood from the auricle to the ventricle. The soft murmur, like other bellows murmurs, may be due either to contraction of the orifice through which the blood passes, or to roughness of the surface over which it flows. 4. A rough presystolic murmur denotes a mitral obstructive lesion, the obstruction due to adhesion of the mitral curtains, leaving a contracted orifice, the curtains remaining flexible. A presystolic soft murmur denotes either a contracted orifice or roughness of the endocardial membrane. 5. A rough presystolic murmur, exceptionally, is produced when there is no mitral lesion, aortic regurgitation existing whenever the murmur is thus produced. The production of this murmur without mitral lesion may be explained by the physical conditions incident to aortic regurgitation, taken in connexion with the

mechanism of the murmur. 6. A rough mitral presystolic murmur is not always present in connexion with contraction of the mitral orifice, and by reference to the physical conditions, together with the mechanism of the murmur, its absence in certain cases may be satisfactorily explained. 7. A soft mitral presystolic murmur is a very rare physical sign. A rough mitral presystolic murmur, on the other hand, is by no means rare, although less frequent in its occurrence than the mitral systolic, the aortic direct, and the aortic regurgitant murmurs. 8. Mitral lesion giving rise to presystolic murmur is sometimes tolerated for a much longer period than appears to be generally supposed.

THE PHYSIOLOGICAL AND THERAPEUTICAL ACTION OF ERGOT.

In the March number of the *New York Medical Journal and Obstetrical Review*, Dr. Etienne Evetzky, of New York, concludes the publication of his Joseph Mather Smith Prize Essay on Ergot. Although dealing mainly with the physiological and therapeutical actions of the drug, the author gives a comprehensive account of the history of the different varieties of ergot, their botanical relations, their microscopical structure, and their chemical composition; the methods of their production, collection, preservation, and preparation for medicinal use; the relations of ergot to other remedies, &c. In comparing the action of ergot with that of a number of other excito-motors of the organic muscular tissue, an arbitrary group of which, the author thinks, ergot may be taken as the typical representative, he remarks that strychnia is most closely allied to ergot in its effects, the main difference being that strychnia acts with far greater energy on the spinal motor centres of the voluntary muscular tissue. Digitalis is distinguished by its predominant stimulating action on the heart. The chief difference between the action of ergot and that of Calabar bean lies in the early occurrence of a paretic state of the voluntary motor apparatus after doses of the latter drug that are not quite toxic. Atropia and nitrite of amyl are mentioned as antagonists to ergot. For hypodermic administration we may use the extract, the fluid extract, or sclerotic acid, diluted in water, with or without the addition of glycerine or alcohol, which latter substances, the author thinks, do not improve the solution in the least. The solution should always be clear and not too old, and should be made somewhat alkaline if the injections are particularly painful. The solution should invariably be injected into the muscular tissue, and it is well to begin with small doses. The therapeutical applications of ergot are considered under five heads:—1. Disorders of the circulation and diseases of the organs of circulation. 2. Paretic conditions of the organs composed of organic muscular tissue, the circulatory system excepted. 3. Inflammatory and other morbid enlargements and growths. 4. Abnormal secretions. 5. Symptoms referable to the nervous system, and depending

chiefly upon circulatory disorders within it. In regard to contraindications to the use of ergot, it should be used with extreme caution in patients with an enfeebled heart. Pregnancy is not an absolute contraindication. The use of the drug should be suspended during menstruation, unless it is given for some special condition of that function. To avoid disturbing the digestion it is best to give the drug by the rectum or hypodermically. The remainder of the article deals with the special diseases in which ergot seems capable of effecting good results.

TREATMENT OF GOÎTRE WITH ERGOTIN.

M. Bauwens (*Jour. des Sci. Méd. de Louvain*) divides cases of goître into the following classes:—1. Cystic goître, with easily apparent fluctuation. 2. Goître partly cystic and partly hypertrophic. 3. Goître characterised by diffuse parenchymatous hypertrophy and great vascularity. 4. Recent goître, soft and diffuse. In cystic goître, and in soft, diffuse, recent goître, the author considers that iodine is the best remedy, and has most confidence in parenchymatous injection as the mode of its employment. He calls attention to the fact, however, that in proportion as vascularity predominates as a cause of thyroid enlargement, so will iodine fail to cause reduction. Iodine stimulates the reabsorption of the contents of the cysts, but cannot cause the vascularity to diminish. It is in these latter cases that the author recommends ergotin. The ergotin should be injected into the substance of the tumour; it at once causes contraction of the muscular coats of the small arteries, and a diminution in the size of the tumour and in the amount of pulsation observed in it is at once apparent. He uses the following solution:—℞. Yvon's ergotin, 1 gramme (gr. 15); glycerine, water, in equal parts, enough to make 7 grammes (ʒ j$\frac{3}{4}$). Of this solution he injects 2 grammes (ʒ ss.) at a time directly into the substance of the goître; this treatment is repeated at intervals of about two weeks until a cure is effected. It may not be out of place to mention that the ergotin of Yvon does not differ in any essential from that of Bonjean and other makers.—*N. Y. Med. Jour. and Obst. Rev.*, March, 1882.

INSANITY FROM DRUGS.

Members of the medical profession, especially those having had dealings with the insane, are earnestly requested by Dr. H. H. Kane, De Quincey Home, Fort Washington, New York City, to answer the following questions, fully, yet concisely. The subject is one of so much importance, medico-legally and otherwise, and so very little is to be found upon it in works on insanity, that it merits the attention asked for it:—1. Have you ever seen any cases of insanity, temporary or permanent, or any deviation from the normal mental or moral state that could be traced directly to the use of a single large dose, or the continued use of

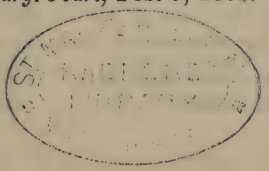
Opium, or any of its preparations or alkaloids? 2. Of what type was such insanity? Give symptoms. 3. State patient's age, sex, civil condition, and occupation. 4. What was its duration and result? 5. State colour of patient's hair, eyes, and complexion. 6. Was there any hereditary tendency to insanity, or any history of alcoholism, grave nervous disease, or any drug habit in the patient's ancestors? 7. What amount of the drug was used, and for how long a time? 8. What line of treatment was pursued? 9. Please answer the same questions regarding the use of Chloral Hydrate. 10. Please answer the same questions regarding the use of Bromide of Potassium, or any other drugs. In all cases so requested, communications will be considered strictly confidential. Reprints of the article, embodying the results of such statistics, will be sent to each correspondent.

IODOFORM IN GYNÆCOLOGICAL PRACTICE.

Dr. Frank P. Foster, editor of the *New York Medical Journal and Obstetrical Review*, publishes in the March number of that journal some clinical notes on the use of iodoform in gynæcological practice, especially in pelvic peritonitis and cellulitis of a chronic form. The most prompt and satisfactory results were obtained in cases of palpable pelvic exudation. Such cases, however, do better, according to the author's experience, under the more usual methods of treatment than those in which the exudation is not capable of detection by palpation, but is inferred to be present from conditions that can scarcely be explained on any other theory. But, while such is the case, it is quite as true, he remarks, that we now and then meet with bulky exudations that prove utterly rebellious to treatment. A good deal depends, no doubt, upon whether the deposit is of recent or of remote formation; and this question it is not always easy to settle in the cases of patients of whose past history we know nothing beyond what we may be able to elicit by questioning them. The proper use of vaginal injections of hot water being assured, he would esteem the three great remedies for chronic extra-uterine pelvic inflammation in the following order:—(1) Hot water, (2) iodoform, (3) galvanism. As to the best method of using iodoform in such cases, his preference is for its application to the upper part of the vagina, and his practice is to tampon the whole vaginal canal with wicking. This prevents the application from being washed away with the discharge, and the tampon is often of great service by its mechanical action—steadying the uterus, sometimes exerting a gentle, even distension upon the deposit, and perhaps inducing muscular contraction. These tampons are almost always borne without pain or discomfort, and, from the fact that iodoform is an antiseptic, they may be retained for several days. His custom is, however, to direct their removal at the end of thirty-six hours.

PERIOD OF GESTATION IN THE ELEPHANT.

The birth of a young elephant at Bridgeport, U. S., is the second well authenticated instance of such an occurrence in captivity on record, a previous birth having taken place in Philadelphia in March, 1880. Professor Owen, of London, in Vol. III., page 742, of his Anatomy of Vertebrates, mentions still another instance as having occurred August 3, 1865, the elephants having paired December 18, 1863, but does not state where the birth took place, nor does he cite any authority in reference to it. Prof. H. C. Chapman, of Philadelphia, who, from his connexion with the Zoological Garden there, and his interest in comparative anatomy, had an opportunity to follow events in the case of the elephant Hebe from the first suspicions of pregnancy to parturition, made an interesting communication to the Academy of Natural Sciences, of Philadelphia—to be found in Vol. VIII. of its journal—upon the placenta and generative apparatus of the elephant, presenting at the same time the injected placenta. In the case of Hebe the first coitus took place May 29th and the last June 20th, 1878. The young elephant was born March 9th, exactly twenty months and twenty days after the last copulation, or twenty-one months and fifteen days reckoning from the first one. The fixing of the period of gestation in the elephant at six hundred and thirty to six hundred and fifty-six days is another interesting illustration of modern investigation confirming the statements made by that most profound thinker and careful observer, Aristotle. The labour was a very short one, the mother standing on all fours, with one hind foot slightly raised. The head presented. The umbilical cord broke, and was removed with the placenta and membranes shortly afterward. Immediately after birth the mother rolled the young one in the straw. The young elephant, a female, stood thirty inches in height, measured from base of trunk to root of tail thirty-five inches, and weighed two hundred and thirteen and one-half pounds. It was noticed immediately that it sucked with the mouth, and not with the trunk, as Buffon reasoned it must do. . . . The placenta of the elephant is not only interesting on account of its rarity, but also from its combining the characters of the placentæ of three different sets of animals. The impossibility of using the placenta, in the case of the elephant at least, as a means of classification is therefore sufficiently obvious. The latest elephantine baby is stated to have weighed one hundred and forty-six pounds at birth, and the period of gestation, as given, was shorter by several weeks than in the case reported by Dr. Chapman.—*Boston Med. and Surg. Jour.*, Feb. 9, 1882.



ST. MARY'S HOSPITAL
RADFORD
LIBRARY
MANCHESTER

INDEX

TO THE SEVENTY-THIRD VOLUME.

Abraham, Mr. P. S., micro-organisms in ophthalmia, 152.
Accidental concealed Hæmorrhage, Dr. Horne on, 439.
Addison's disease, by Dr. Kendal Franks, 279—by Dr. Finny, 293.
Air-passages, foreign bodies in the, 346.
Alkapton in urine, Dr. George C. Armstrong, 53.
Allan, Dr. William, large auricular growths, 203.
Ammonium carbonate in pneumonia, 129.
Amputation at the hip-joint, by Mr. Stokes, 273.
Anæsthesia, a new danger in, 348.
Antiseptic inhalation, by Dr. E. M. Cosgrave, 435.
Antiseptic suture of patella, 318.
Archer, Dr. R. S., carbolic acid poisoning, 93.
Armstrong, Dr. George C., alkapton in urine, 53.
Arsenic in lymphoma, 214.
Ascaris lumbricoides, 349.
Atkins, Dr. Ringrose, report on nervous and mental disease, 418, 503.
Atlas of pathology, *Rev.*, 332.
Atthill, Dr., uterine fibroid tumour, 161—ovarian cyst, 162—craniotomy, 239—myxoma uteri, 240—excision of fundus uteri, 357—uterine polypus, 437—hypertrophy of uterus, 534.
Aural therapeutics, by Dr. H. M. Jones, 14.
Auricular growths, Dr. Allan on, 203.
Australia, statistics of Midwifery in, by Dr. Knaggs, 491.

Bacillus of typhoid, 270.
Bandage for varicocele, 557.
Bennett, Dr. E. H., fractures of metacarpal bones, 72—necrosis of lower jaw, 163—traumatic dislocation of left hip with true ankylosis of right hip, 254.
Benson, Dr. A. H., coloboma of the chorioid and optic nerve sheath, 177.
Bladder, tapping the, through the prostate, 224.
Boils, treatment of, 256.
Bos, Dr., translation of Pacini's cholera, *Rev.*, 493.
Bougie, fiddle-string as a, 225.
Boyd, Dr., table of average weights of human body and brain, *Rev.*, 501.
Brain diseases, conjugate deviation of the eyes in, 264.
Bromate of quinine, Dr. Cameron on, 472.
Buboes, abortive treatment of, with carbolic acid, 553.
Burdon-Sanderson, Dr. J., practical exercises in physiology, *Rev.*, 209.
Byers, Dr. J. W., patellar reflex, 186.
Byrne, Dr. J. A., President's Address before Obstetrical Society, 57.

Cakes and cheese, illness caused by, 116.
Cameron, Dr. C. A., report on public health, 112—quinine iodate and bromate, 472.
Cancer—removal of uterus for, 75—precancerous stage of, 269—radical cure of, 518.
Capsicum in uterine hæmorrhages, 147.
Carbolic acid—poisoning, 79—by Dr. R. S. Archer, 93—abortive treatment of buboes with, 553.
Carcinoma gastri, 454.
Caries of spine in childhood, 223.
Carrick, Dr. George L., koumiss, *Rev.*, 98.
Cervical lymphatic glands, enlarged, 449.
Chloral hydrate—poisoning by, Dr. Duffey on a case of, 302—in acute infantile gastro-enteritis, 461.
Chorioid, coloboma of, by Dr. A. H. Benson, 177.
Clavicle, fracture of, treated with silver sutures, 363.
Climatology, works on, *Rev.*, 205.
Clinical records, 360.
Cole, Dr. Beverley, exhibition of new instruments, 66, 144.
Coleman, Mr. Alfred, dental surgery and pathology, *Rev.*, 211.
College of Physicians, transactions of the Medical Society of the, 53, 130, 226, 349, 430, 519.

Coloboma of chorioid and optic nerve sheath, by Dr. A. H. Benson, 177.
Concealed hæmorrhage, accidental, Dr. Horne on, 439.
Convulsions, cases of, by Dr. Henry, 241.
Cooper, Mr. Arthur, syphilis, *Rev.*, 105.
Copal varnish in felon, 272.
Cosgrave, Dr. E. M., respirator for antiseptic inhalation, 435.
Craniotomy, by Dr. Atthill, 239.
Cysts, dermoid, by Mr. Elsner, 376.

Dermoid cysts, by Mr. Elsner, 376.
Diabetes mellitus, treatment of, 459.
Diphtheritic membrane, new solvent for, 143—endocarditis in chronic valvular disease, Dr. Nixon on, 434.
Disinfection, new and cheap, 417.
Dobell, Dr. Horace, diet and regimen, *Rev.*, 500.
Dublin Obstetrical Society, proceedings of the, 57, 144, 230, 437, 533—Pathological Society, proceedings of the, 67, 148, 247, 356, 450.
Duffey, Dr. G. F., periscope, 79, 169, 268, 367, 459, 557—multilocular ovarian tumour, 148—cerebral hæmorrhage, 247—disease of kidneys consequent on stricture, 248—poisoning by chloral, 302.
Duhring, Dr. Louis A., atlas of skin diseases, *Rev.*, 110.

Eczema, fatal cases of, by Dr. H. Kennedy, 521.
Electric light and the eyes, 173.
Elephant, period of gestation in the, 561.
Elsner, Mr. F. W., dermoid cysts, 376.
Embalming bodies, new method of, 502.
Endocarditis, diphtheritic, in chronic valvular disease, Dr. Nixon on, 434.
Enteric fever, case of, by Dr. Jackson, 519.
Ergot, administration of, 272—action of, 558.
Ergotin in Goître, 559.
Erichsen, Mr. J. R., concussion of the spine, *Rev.*, 496.
Erysipelas, salicylate of soda in, 80.
Esler, Dr. Robert, whisky, 257.
Evans, Mr. C. W. de Lacy, consumption, *Rev.*, 213.
Excision—of the knee, by Mr. P. J. Hayes, 81—of the shoulder, by Mr. P. J. Hayes, 198—of the tongue, 217.
Excretion of nitrogen by the skin, Dr. J. Byrne Power on, 369.
Exsection of inferior maxillary nerve, 225.
Extirpation of the lachrymal sac, 268.
Eyes, conjugate deviation of, in brain diseases, 264.

Felon, treatment of, by copal varnish, 272.
Fever—temperature charts in, by Dr. J. W. Moore, 349—case of enteric, by Dr. R. W. Jackson, 519.
Fiddle-string as a bougie, 225.
Fingers, excessive development of, by Dr. Horne, 239.
Finny, Dr. J. M., enteritis and peritonitis, 158—phthiriasis palpebrarum, 201—apparent recovery from morbus Addisonii, 293.
Foreign bodies in the air-passages, 346.
Fracture of clavicle, treated with silver sutures, 363.
Franks, Dr. Kendal, Addison's disease, 279—report on rhinology, &c., 333.

Galvano-caustic treatment of the nose, throat and larynx, 344.
Gas purification rooms, 127.
Gastro-enteritis, chloral in acute infantile, 461.
Genital reflex, 165.
Genital organs, imperfect development of, by Mr. Horne, 536.
Gestation, period of, in the elephant, 561.
Glossitis, idiopathic, 556.
Goître, ergotin for, 559.
Guy's Hospital reports, *Rev.*, 213.

Hæmorrhage, accidental ante-partum, 169—uterine, capsicum in, 147—into ventricles of brain, 172—accidental concealed, Dr. Horne on, 439.
Hair tonic, 272.
Hartshorne, Dr. Henry, essentials of medicine, *Rev.*, 412.
Harvey, the late Dr. Reuben J., 130—memoir of, 174.
Hayes, Mr. P. J., excision of the knee, 81—excision of the shoulder-joint, 198.
Health, public, report on, by Dr. Cameron, 112.
Hegar's dilators, by Dr. Macan, 230, 535.
Henry, Dr. Richard, convulsions, 241.
Hey's internal derangement of knee-joint, by Mr. Knott, 479.
Hill, Dr. Berkeley, syphilis, *Rev.*, 105.
Hillis, Mr. John D., leprosy in British Guiana, *Rev.*, 331.
Hip-joint, amputation at the, by Mr. Stokes, 273.
Horne, Mr., excessive development of fingers and toes, 239—uterine tumours, 438—accidental concealed hæmorrhage, 439—imperfect development of genital organs, 536.
Hutchinson, Mr. Jonathan, the precancerous stage of cancer, 269.
Hyoscyamia, 22.
Hypertrophy of the uterus, Dr. Atthill on 534.
Hystero-epilepsy, 367.

Idiopathic—pericarditis, by Dr. Walter Smith, 1—glositis, 556.
Index-catalogue of the library of the Surgeon-General's Office, United States Office, *Rev.*, 48.
Infantile gastro-enteritis, chloral in acute, 461.
Insanity—in general, report on, 418—from drugs, 559.
Intestines, ante and post mortem wounds of the, 460.
Intra-uterine treatment of puerperal fever, 429.
Iodate of quinine, Dr. Cameron on, 472.
Iodoform—in phagedænic ulceration, 56—death following local uses of, 459—in gynæcological practice, 560.
Irish medical directory for 1882, *Rev.*, 111.
Iritis syphilitica, 171.

Jackson, Brigade-Surgeon, abscess opening into bladder, 250—case of enteric fever, 519.
Jacobi, Dr. A., on Rudolf Virchow, *Rev.*, 414.
Jones, Dr. H. Macnaughton, aural therapeutics, 14—treatise on aural surgery, *Rev.*, 37.

Keetley, Mr. C. B., index of surgery, *Rev.*, 497.
Kennedy, Dr. Henry, Salisbury's views on phthisis, 87—two fatal cases of eczema, 521.
Knaggs, Dr. Samuel, statistics of midwifery in Australia, 491.
Knee, excision of the, by Mr. P. J. Hayes, 81.
Knee-joint, internal derangement of, Mr. Knott on, 479.
Knott, Mr. J. F., Mapother's physiology, *Rev.*, 325—Hey's internal derangement of knee-joint, 479.

Labour, nitrous oxide in, Dr. Macan on, 233.
Lachrymal sac, extirpation of the, 268.
Laryngology, report on, 333.
Lead-poisoning amongst workmen, 119.
Leask, Mr. J. G., examination questions, *Rev.*, 498.
Lithæmia, nervous symptoms of, 172.
Liverpool Medico-Chirurgical Journal, *Rev.*, 415.
Locomotor ataxy, nerve-stretching in, 222.
Longevity in Europe, 126.
Lusk, Dr. William T., science and art of midwifery, *Rev.*, 319.
Lymphatic glands, enlarged cervical, 449.
Lymphoma, arsenic in, 214.

M'Alpine, Mr. D., zoological atlas, *Rev.*, 50.
Macan, Dr. A. V., Hegar's dilators, 230, 535—nitrous oxide in labour, 233.
M'Clintock, Dr. Alfred H., death of, 66.
M'Keown, Dr., pilocarpine, 398.
Mania after scarlatina, 165.
Mapother's physiology, by Dr. Knott, *Rev.*, 325.
Maturin, Mr. Leslie, urari in tetanus, 307.
Medical Society of the College of Physicians, transactions of the, 53, 130, 226, 349, 430, 519—Ulster, transactions of the, 257.
Mental disease, report on, by Dr. R. Atkins, 418, 503.
Meteorological notes, 77, 167, 267, 365, 457, 555.
Midwifery statistics in Australia, by Dr. Knaggs, 491.
Milk, illness caused by filth in, 112.
Mistletoe, the, in medicine, 79.
Mitral presystolic murmurs, 557.
Moore, Dep.-Surgeon-General, health resorts in India, *Rev.*, 206.
Moore, Dr. J. W., sanitary and meteorological notes, 76, 166, 265, 364, 456, 554—outbreak of disease from drinking impure water, 131—large gall-stones, 151—thoracic aneurism, 154—ascaris lumbricoides, 349—temperature charts in fever, 349—carcinoma gastri, 454.
Morbus Addisonii, 279, 293.
Murrell, Dr. W., what to do in poisoning, *Rev.*, 109.
Myxoma uteri, by Dr. Atthill, 240.

Nerve, exsection of inferior maxillary, 225.
Nerve-stretching in locomotor ataxy, 222.
Nervous and mental disease, report on, by Dr. Ringrose Atkins, 418, 503.
Nervous system, anatomy and physiology of the, 423.
Neuro-pathology, 503.
Neuro-therapeutics, 515.
Neville, Dr. William C., causation of presentations in labour, 541.
New Sydenham Society's lexicon of medicine, *Rev.*, 110—atlas of pathology, fasciculus 3, *Rev.*, 332.
Nitrogen, excretion of, by the skin, Dr. J. Byrne Power on, 369.
Nitrous oxide in labour, Dr. Macan on, 233.
Nixon, Dr. C. J., stenosis of the mitral orifice, 67—peritonitis from caseous mesenteric glands, 432—acute diphtheritic endocarditis in valvular disease, 434.
Noma pudendi, by Dr. R. D. Purefoy, 537.

Obstetrical instruments, by Dr. Cole, 144.
Obstetrical Society of Dublin, proceedings of the, 57, 144, 230, 437, 533.
Optic nerve sheath, coloboma of the, by Dr. A. H. Benson, 177.
Otitis media, purulent, with caries, by Dr. Pope, 360.
Ovary, dermoid cysts of the, Mr. Elsner on, 376.
Ovum, aborted, report on, 536.
Oysters, green, 118.
Ozæna, 333.

Pacini, Dr. P., du processus morbide du choléra Asiatique, *Rev.*, 493.
Paralysis, peculiar form of sensory, Dr. Walter Smith on, 431.
Parasites, rapid process for colouring and preserving, 532.
Parasiticide, a new, 368.
Paris, the air of, 129.
Patella, antiseptic suture of the, 318.
Patellar reflex, by Dr. J. W. Byers, 186.
Pathological anatomy of spinal cord in phosphorus poisoning, 368.
Pathological Society of Dublin, proceedings of the, 67, 148, 247, 356, 450.
Pathology, atlas of, *Rev.*, 332.
Pericarditis, idiopathic, by Dr. Walter Smith, I.
Periscope, edited by Dr. Duffey, 79, 169, 268, 367, 459, 557.
Peritonitis from caseous mesenteric glands, Dr. Nixon on, 432.
Peritonitis, physical diagnosis of, 455.
Phagedænic ulceration, sulphide of carbon and iodoform in, 56.
Pharyngology, report on, 333.
Phosphorus poisoning, spinal cord in, 368.
Phthiriasis palpebrarum, by Dr. Finny, 201.
Phthisis, Salisbury's views on, by Dr. H. Kennedy, 87.
Physicians, College of, transactions of the Medical Society of the, 53, 130, 226, 349, 430, 519.
Pickering, Mr. Thomas H., Monaco, *Rev.*, 207.
Pilocarpine, by Dr. M'Keown, 398.
Pneumonia—carbonate of ammonium in, 129—peculiar urine in, Dr. Walter Smith on, 227.
Poisoning by—carbolic acid, 79, 93—lead amongst workmen, 119—chloral hydrate, 302—phosphorus, spinal cord in, 368.
Polypus uterine, Dr. Atthill's case of, 437.
Pope, Dr. Frederick A., purulent otitis media with caries, 360.
Potassium bichromate causing injury to dyers, 118.
Power, Dr. J. Byrne, excretion of nitrogen by the skin, 369.
Presentations in labour, cause of, Dr. Neville on, 541.
Presystolic murmurs, nature of, 557.
Proceedings of the Obstetrical Society of Dublin, 57, 144, 230, 437, 533—Pathological Society of Dublin, 67, 148, 247, 356, 450.
Prostatic obstruction, prevention of, 220.
Protocatechuic acid in urine, by Dr. Walter Smith, 465.
Public health, report on, by Dr. C. A. Cameron, 112.
Puerperal fever, intra-uterine treatment of, 429.
Purcell, Dr. F. Albert, cancer, *Rev.*, 51.
Purefoy, Dr. R. D., noma pudendi, 537.

Quinine iodate and bromate, Dr. C. A. Cameron on, 472.

Rainfall in 1881, 169.
Ranney, Dr. Ambrose L., applied anatomy of the nervous system, *Rev.*, 408.
Records, clinical, 360.
Reflex, patellar, Dr. Byers on, 186.
Reichert, Dr. Edward T., convulsions due to depression of spinal inhibitory centres, *Rev.*, 52.
Report—on public health, by Dr. C. A. Cameron, 112—surgery, by Dr. Thomson, 215—rhinology, &c., by Dr. Franks, 333—nervous and mental disease, by Dr. Ringrose Atkins, 418, 503.
Reports, half-yearly—public health, 112—surgery, 215—rhinology, &c., 333—nervous and mental disease, 418, 503.
Respirator for antiseptic inhalation, Dr. E. M. Cosgrave on, 435.
Reynolds, Dr. J. Emerson, experimental chemistry, *Rev.*, 411.
Rhinology, report on, 333.
Ringworm, 363.

Salicylate of soda in erysipelas, 80.
Salisbury's views on phthisis, by Dr. H. Kennedy, 87.
Salivary duct, re-establishment of a divided, by Dr. W. T. Stoker, 8.
Sanitary and meteorological notes, by Dr. J. W. Moore, 76, 166, 265, 364, 456, 554.
Satterthwaite, Dr. Thomas E., manual of histology, *Rev.*, 34.
Scarlatina, mania after, 165.
Seguin, Dr. E. C., localised cerebral lesions, *Rev.*, 495.
Sensory paralysis, peculiar form of, Dr. Walter Smith's case of, 431.

Shoulder-joint, excision of, Mr. P. J. Hayes on, 198.
Sinclair, the late Sir Edward B., 430, 533—obituary notice of, 462.
Skin, excretion of nitrogen by the, Dr. J. Byrne Power on, 369.
Smith, Dr. Walter, idiopathic pericarditis, 1—acute ulcerative endocarditis, 153—peculiar urine in pneumonia, 227—peculiar form of sensory paralysis, 431—protocatechuic acid in urine, 465.
Society—Medical, transactions of the, 53, 130, 226, 349, 430, 519—Dublin Obstetrical, proceedings of the, 57, 144, 230, 437, 533—Pathological, proceedings of the, 67, 148, 247, 356. 450—Ulster Medical, transactions of the, 257.
Soda, bicarbonate of, in tonsillitis, 256.
Spermatorrhœa, treatment of, 264.
Spinal cord in phosphorus poisoning, 363.
Spine, caries of, in childhood, 223.
Sponge-grafting, 215.
Stanley, Mr. W. F., properties and motions of fluids, *Rev.*, 499.
Startin, Mr. James, parasitic diseases of the skin, *Rev.*, 105.
St. George's Hospital reports, *Rev.*, 102.
Stoker, Dr. W. Thornley, the re-establishment of a divided salivary duct, 8.
Stokes, Dr. William, necrosis of knee, 70—amputation at the hip-joint, 273—sarcoma of thigh, 356—case of Taliacotian operation, 391—perforation of vermiform appendix, 450.
Stricture, prevention of, 220.
Sulphide of carbon in phagedænic ulceration, 56.
Superoxidised molecules, physiological activity of, by Dr. Cameron, 472.
Surgery, report on, by Dr. Thomson, 215.

Taliacotian operation, Mr. Stokes's case of, 391.
Teale, Mr. T. Pridgin, dangers to health, *Rev.*, 212.
Temperature charts in fever, Dr. J. W. Moore on, 349.
Tetanus, urari in, Mr. Maturin on, 307.
Thomson, Dr. William, fractures of the skull, 156—report on surgery, 215.
Thudichum, Dr. J. L. W., annals of chemical medicine, *Rev.*, 31.
Toes, excessive development of, by Dr. Horne, 239.
Tongue, excision of the, 217.
Tonsillitis, bicarbonate of soda in, 256.
Transactions of the College of Physicians of Philadelphia, *Rev.*, 52—Medical Society of the College of Physicians, 53, 130, 226, 349, 430, 519—Ulster Medical Society, 257.
Trichina spiralis in adipose tissue, 128.
Typhoid bacillus, 270.

Ulster Medical Society, transactions of the, 257.
Urari in tetanus, by Dr. Maturin, 307.
Urine—alkapton in, exhibited by Dr. George C. Armstrong, 53—peculiar, in acute pneumonia, Dr. Walter Smith on, 227—protocatechuic acid in, Dr. Walter Smith on, 465.
Uterine—hæmorrhages, capsicum in, 147—myxoma, 240—polypus, 437—tumour, 438.
Uterus—removal of, for cancer, 75—hypertrophy of the, Dr. Atthill on, 534.

Varicocele, treatment of, 218—bandage for, 557.
Varnish, copal, in felon, 272.
Vermiform appendix, fatal perforation of, Dr. Stokes on, 450.
Virchow, Rudolf, by Dr. A. Jacobi, *Rev.*, 414.
Vital statistics, 76, 166, 265, 364, 456, 554.

Warfvinge, Dr. F. W., exanthematic typhus, *Rev.*, 23.
Warren, Dr. Joseph H., hernia, *Rev.*, 107.
Water, impure, a cause of disease, by Dr. J. W. Moore, 131.
Waters, magnesian, and calcium sulphate, made drinkable, 126.
Watts, Mr. H., dictionary of chemistry, *Rev.*, 47.
Whisky, Dr. Esler on, 257.
Whitehead, Dr. J. L., climate of the undercliff, Isle of Wight, *Rev.*, 208.
Whitla, Dr. William, elements of pharmacy, materia medica, and therapeutics, *Rev.*, 40.
Wight, Dr. J. S., principles of myodynamics, *Rev.*, 49.
Wilson, Mr. William S., ocean as a health resort, *Rev.*, 205.
Works on climatology, *Rev.*, 205.
Wounds, ante and post mortem, of intestines, 460.

ST MARY'S HOSPITAL RADFORD LIBRARY MANCHESTER
WELLCOME LIBRARY INSTITUTE

JOHN FALCONER, Printer, 53 Upper Sackville-street, Dublin.